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ABSTRACT

As a continuing part of its validity studies, the Association of American Medical Colleges commissioned a study of the speediness of the Medical College Admission Test (MCAT). If speed is a hidden part of the test, it is a threat to its construct validity. As a general rule, the criterion used to indicate lack of speediness is that 80% of the examinees will finish 100% of the items on a test and that 100% of the examinees will finish 80% of the items. Previous studies have indicated that this rule is not violated by the MCAT. For this study, the frequencies of omitted items and items "not reached" were tabulated, with counts of omitted items including items not reached. Items in the not reached category are an indication of speediness since they represent omitted items only at the end of a test section. Data were examinee responses to three of four test sections (physical sciences, biological sciences, and verbal reasoning). Data came from forms of the MCAT administered to 16,520 testtakers in 1994, 3,638 testtakers in 1994, and 12,625 examinees in 1996. The various analyses , including split half reliabilities, reveal no evidence of speediness on the science sections of the MCAT. The verdict is not so clear for the verbal reasoning section of the test. Patterns of omitted and "not reached" items exceeded the proportions of the science tests, and patterns of guessing were also noticeable. The evidence for speediness is not glaring and does not violate normally acceptable standards. Nor is there evidence that any speediness affects any particular group differentially. (Contains 59 tables, 12 figures, and 2 references.) (SLD)

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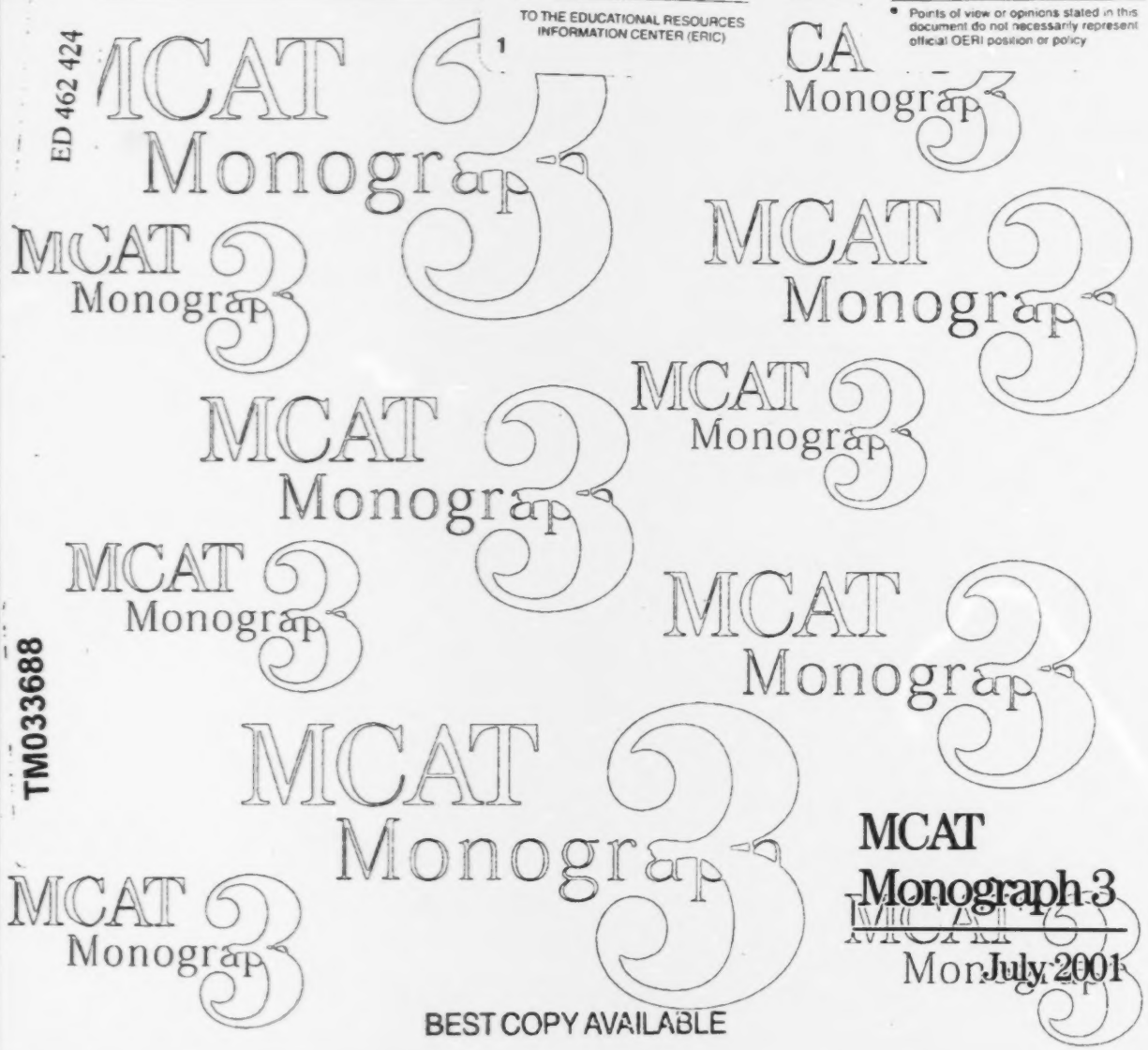

MCAT Monograph 3

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An Investigation into the Possible Speededness of the Medical College Admission Test

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Introduction

"A pure *speed test* is one in which individual differences depend entirely on speed of performance. Such a test is constructed from items of uniformly low difficulty, all of which are well within the ability level of the persons for whom the test is designed. The time limit is made so short that no one can finish all the items. Under these conditions, each person's score reflects only the speed with which he or she worked. A pure *power test*, on the other hand, has a time limit long enough to permit everyone to attempt all items. The difficulty of the items is steeply graded, and the test includes some items too difficult for anyone to solve, so that no one can get a perfect score." (Anastasi, 1988)

The Medical College Admissions Test (MCAT) is intended to be a power test. It is a standardized, multiple-choice examination designed to assist admission committees in predicting which of their applicants will perform adequately in the medical school curriculum. The test assesses examinees' skills in problem solving, writing and critical thinking as well as knowledge of science concepts and is divided into four different test sections: Verbal Reasoning, Physical Sciences, Writing Sample, and Biological Sciences.

As a continuing part of its validity studies, the Association of American Medical Colleges (AAMC), which administers the MCAT, conducted this study on speededness. If speed is a hidden part of the test, it is a threat to its construct validity. As a general rule, the criterion used to indicate lack of speededness is that 80% of the examinees will finish 100% of the items on a test and that 100% of the examinees will finish 80% of the items. Although analyses of this sort are conducted on a routine basis, test administrators felt that a closer examination of other indicators of speededness, as well as a search for evidence of speededness affecting various groups' performance would be warranted to further assure the validity of the test.

Methodology

Previous studies have determined that the 80-80 rule has not been violated by the MCAT (AIR, 1997). In order to examine speededness in these studies, frequencies of omitted items and items "not reached" were tabulated. Whenever an examinee did not respond to an item, that non-response was counted as an "omit". If the examinee did not respond to an item and then did not respond to any of the remaining times in a test section, the first non-response and the subsequent non-responses were counted as "not reached." For this study, omissions and "not reached" are not mutually exclusive: counts of omitted items include "not reached" items. The items included in the "not reached" category are used as indications of speededness, since they represent omitted items only at the end of a test section.

Means and standard deviations of numbers of right, wrong, and omitted items are listed and compared for various groups of interest. Although differences in group performance were detected, there was nothing in the pattern of these means that suggested differential speededness. However, these statistics are included in this report, as a baseline for examination of group performance in other analyses related to item placement at the end of the test.

In addition to omitting items, it was felt another basic response to time pressure at the end of a test would be for examinees to simply guess by randomly selecting answers. This was particularly relevant because the MCAT is scored on right answers only; that is, there is no penalty for incorrect answers. Although it is difficult to determine every possible guessing pattern (particularly those that make designs on an answer sheet), response strings for the last five items of each section were examined for obvious patterns such as repeated letters, AAAAA, BBBBB and so on.

Since items in Form A and Form B of any particular MCAT test differ only in the order presented, item order was examined in various ways as a measure of speededness. Item difficulties as well as the proportion of omitted items were graphed, contrasting one form against the other. In addition, the response patterns to the last five items of each section were examined and then compared to the same items presented in earlier positions in different forms of the test. Group responses to these last five items were also examined for differences and thus evidence of speededness.

Finally in examining items for order effects, split half reliabilities within the different MCAT sections were contrasted. A lower reliability for a first half/last half split versus an odd/even split of the test was felt to be evidence of speededness in items that appeared later in the test. In the test sections where differences in the reliabilities were determined, these reliabilities were further examined for differential effects among various groups.

Data

For this study examinee responses to three of the four test sections, physical sciences, biological sciences and verbal reasoning, were examined. The data used came from four forms of the MCAT (15A and B, 23A and B) administered in two different years: 1994 and 1996. Forms 15(A and B) were taken by 16,520 test takers in 1994; Form 15(A only) was taken by 3638 examinees in 1994. Forms 23 (A and B) were taken by 12,625 examinees in 1996.

The various groups examined for this study included:

- Males and females
- Examinees who have taken the MCAT before and those who took the examination only once: "Repeaters" and "First-time Takers."
- Five different ethnic group designations: Asian, Black, Hispanic, White and "Other." Because the number of examinees with no ethnic group designation was fairly large, statistics for the "Missing" group are also included.
- Three different undergraduate major categories: Humanities/Social Science, Science, and "Other," as well as "Missing."
- Examinees who took the MCAT under special non-timed conditions, as specified by the ADA.
- Examinees for whom English is a second language and those for whom it is not: ESL and non-ESL. To be categorized as "ESL" in this study, an examinee must be a non-native English speaker who began speaking English at age 11+.

In addition, contrasts were included between Forms A and B where appropriate.

Results

"Not Reached" Items

Table 1 shows the frequencies of the items "not reached" on all test sections. This table shows that all items were reached by around 99% of examinees in both science sections of the test (zero items were "not reached"). The data suggest that the verbal reasoning section is slightly more speeded, with 4.7% of examinees not reaching at least one item on one test (1994, Form 15) and 3.8% not reaching at least item on the other two tests (1996, Forms 15 and 23).

Omitted Items

Similar frequency distributions for the raw number of items omitted are provided in Table 2 (counts of omitted items include those classified as "not reached"). In all sections of the MCAT, no more than 15% of examinees omitted any items at all. For example, 85.6% of examinees omitted zero (0) items on the Verbal Reasoning section of Form 15(A and B) in 1994 and 85% omitted zero items on the physical sciences section of the same test. The number of examinees omitting one item is the next highest frequency on Table 2 (up to 9.6%), after that, the frequencies of omits drop off dramatically for two items or more.

Graphs of Contrasts by Form

The difference between Form A and Form B for any particular MCAT test, is the order in which the items are presented. To examine the data for a possibility of order effects, the proportion of examinees getting an item correct in Form A was plotted against the corresponding proportion in Form B. The plots presented in Figures 1-6, show that there is no apparent disparity between the item difficulties between forms. This is confirmed by the large Pearson product moment correlation coefficients indicating that the two sets of item difficulties are strongly related. The correlation coefficients are given with each figure.

The proportions of examinees omitting an item were graphed in Figures 9-12. Although the scatter diagrams showed that these proportions were low, in the case of biological sciences sections this was less than 2%, as seen in Figures 7 and 10. The largest number of omits were on the verbal reasoning section and there was a difference between the rate of omission from Form A to Form B. For convenience, the items are labeled with Form A item numbers. The Form B item numbers and positions were slightly different.

Figures 9 and 12 illustrate the disparities in omission rates between items in earlier versus later positions in different forms of the verbal reasoning test. In the upper part of Figure 9, items 42-47 were omitted more often in Form 15B than they were in Form 15A. This is because Items 42-47 actually appeared in positions 50-55 in Form 15B. Similarly, in the lower part of Figure 9, Items 51-55 were omitted less often in Form B than in Form A, again because of differences in item positions. A similar pattern was established in

Figure 12, with Items 38-43 and Items 50-55. To illustrate the differences between omit rates, Tables 5 and 8 contain the proportions used in constructing the corresponding graphs as well as the absolute values of the differences in proportions. It should be noted that most of these differences are very close to zero and the scales on both of these graphs are quite small, ranging up to 5%.

Means and Standard Deviations of Group Performance

Tables 9-17 provide summaries of the means and standard deviations of the numbers of items right, wrong, and omitted items within the various groups. In comparing the number of rights, Asians outscored other ethnic groups on the physical and biological science sections, while whites had the highest number of correct responses on the verbal reasoning section. Across the board, blacks scored least well among all of the ethnic groups, obtaining fewer correct responses, as well as omitting more items. Similarly, males outscored females. First-time test-takers answered more items correctly than did "Repeaters," however they also omitted (slightly) more items. Distinctions among undergraduate major classifications are not very clear, perhaps because of the presence of the large, undefined "Other" group. As might be expected, examinees for whom English is a second language (ESL) are outscored by non-ESL examinees, and the gap is the widest on the verbal reasoning section of the test.

The most interesting contrast is between examinees who received special considerations in the test administration versus those who did not. These examinees consistently had more items correct and fewer omits than those taking the test under normal conditions. The difference in number of items correct is as much as 4.51 items in Table 13 (1996 Form 15A, physical sciences). These data suggest that perhaps time is a factor in performance of examinees. Unfortunately because the nature of the accommodations is unknown, indeed different for each individual case, no real generalizations can be made. Overall, these data do not suggest that the MCAT is more speeded for some groups than for others.

Strings of Last Five Responses

The number of omitted and not reached questions does not yield much information about speededness on the MCAT because examinees, by and large, do not leave many questions blank. One way to look for speededness is to examine responses for noticeable patterns. In this analysis, strings of responses from the last five questions from each test section were examined for recurring letter strings: AAAAA, BBBBB, CCCCC, and DDDDD. Five was determined as a reasonable number of questions because fewer than five responses could have yielded patterns that matched very closely with the actual answer key. For instance, Items 60-63 on the 1994 Form 15B physical sciences section have correct answers in the pattern ABCD and Items 61-63 on the 1996 Form 23A physical sciences have correct responses AAA.

Tables 18-22 present the item response strings analyzed along with the mean raw scores of the examinees using those patterns. The correct response strings are listed under the test section title, and the frequency, percentage and mean score of examinees answering those last five questions correctly are included. Not surprisingly, examinees

who answer the last five questions of the test correctly have much higher total scores than the overall mean for the test.

Examinees tend to use these "fill in" techniques more often on the verbal reasoning test and least often on the biological sciences test. This strengthens the argument that the verbal reasoning section is more speeded than the sciences test sections. Those who use the "fill-in" strategy tend to choose B's or C's. For example, Table 19 shows that 3.7% of examinees used 5 B's on the 1994 Form 15B verbal reasoning test, whereas only 0.8% used 5 A's. This pattern is seen clearly throughout the verbal reasoning columns with 3-4% of examinees listing 5 B's or C's and fewer than 1% opting for A's or D's. Incidentally, there were 3 A's in the correct response string and no B's at all. Those choosing A's had a mean raw score of 33.5 while those choosing other strings had mean scores of around 30.

Tables 21 and 22 show a clearer instance where use of response strings paid off. The 1996 Forms 23A and 23B of the physical sciences sections each had three A's for the final three answers. Examinees choosing to list 5 A's for the last answers did not greatly outnumber examinees choosing B's C's or D's, but their mean scores are much higher than the others. In the 1996 Form 23A physical sciences test, the mean raw score of those choosing AAAAA is 40.4 (Table 21), and on Form 23B, that group had a mean score was 37.8 (Table 22). The others choosing B's and C's had means from 27.1-28.5. An examination of Tables 35 and 36 which illustrate the response patterns for Items 59-63 of the 1996 Form 23A physical sciences test and Form 23B physical sciences test, respectively, shows that A was not always a likely distracter for these items. This strengthens the argument that examinees responding to questions 59-63 with a string of A's, were randomly selecting answers and got lucky in the process.

Response Patterns in the Last Five Items of Each Section

In this distracter analysis of the MCAT, the last 5 items of each test section were compared. Five was chosen as the number of items for various reasons. The verbal reasoning sections examined ended with a reading passage followed by eight items and the items in the biological and physical sciences sections examined seem to be in groups of 11 items. It did not seem necessary to examine the entire last section of each test as the frequency counts of both the omitted and "not reached" items drop off dramatically after one or perhaps two items (Tables 1 and 2). As a result, it was felt that most examinees would at least begin the last section before running out of time.

The tables developed for the item analysis present the frequency and percentage of examinees choosing options A through D or omitting the question with their respective mean raw score on the test section. The shaded box indicates the correct answer. For instance, in Table 24 biological sciences Form 15 A Item 59, 5689 examinees (67.9%) chose the correct option "D." These examinees had a mean raw score 42.1 for this test, this is slightly above the overall mean score of 40.3 for this administration. For reference, the overall mean raw scores for each test are presented in Table 23.

Response Patterns in the Biological Sciences Section

Across Forms A and B of the biological sciences tests, four out of the last five items were the same in both tests. The last topic on the test contains 11 items that are presented in slightly different orders in the different tests. To facilitate examination of comparable items, Table 27 contrasts items covering the same content across forms. For instance, Table 27, Set 1 compares Item 59 in Form 15A from 1996 and 1994 with Item 60 from Form 15B, 1994. In all cases, D was the correct answer choice, chosen by 67%-72% of the examinees. The most popular distracter in this item was option "A", attracting between 18.7% to 23.2% of examinees. In general, this table shows that the response patterns for biological sciences items were consistent across Forms 15A and 15B, whether they were earlier or later in the test. However, the items only varied a few positions.

Table 27 Set 4, which compares Items 61 and 63 shows that fewer examinees chose the correct answer option "A" than the distracter "C." The examinees who did choose the correct answer tended to have average raw scores above the mean raw score for the test section as a whole (43.6-45.3 vs. approx. 40). Omission rates for this item were slightly greater than others in this group of items, but it is not clear this is because of the item position (last) or because of its difficulty.

The distracter analyses of Forms 23A and 23B of the biological sciences test section are shown in Tables 28 and 29. The overall mean for examinees on this test section is roughly the same as for Form 15, around 40 items correct (Table 23). However, the item-by-item comparisons in Table 30 indicate the last items on this test section were easier than those from Form 15. In Form 23A and 23B the most challenging item had a difficulty of 0.65 (Option B Item 59, Form 23B, Table 29) whereas on Forms 15A or 15B the item difficulties ranged from 0.3-0.5. Table 30 shows that the items worked consistently, with no effect of item position in Forms 23A and 23B.

Response Patterns in the Physical Sciences Section

Table 23 indicates that the overall mean raw score for the physical sciences test section (38.7) is lower than for the biology section (39.8). It has already been shown that more examinees omitted at least one item from the physical sciences test than they did from the biological sciences test (Table 2). Many of these omits come within the last 5 items. Tables 31-33 show the Forms 15A and 15B physical sciences test sections comparable to the biology test sections in Tables 24-26. The proportion of examinees omitting items in Tables 24-26 is no more than 0.2%, whereas up to 2% of these same examinees omitted one of the last 5 physical sciences items (Tables 31-33). In addition, the number of omits tends to increase later in the test. For example, Table 33 shows that Item 59 is omitted by 0.9% of the examinees, whereas Item 63 is omitted by 1.5%.

Similar comparisons for the last items in Forms 23A and 23B of the physical sciences are presented in Tables 35-37. None of the sets of compared items in Table 37 show item order effects between Forms 23A and 23B. In addition, the number of omitted items remains stable towards the end of the test, so no additional evidence of speededness in the physical sciences section is gained from these data.

Response Patterns in the Verbal Reasoning Section

A cursory examination of the last five verbal reasoning items shown in Tables 38-40 and Tables 43-44 shows higher omit rates for the verbal reasoning section than for the sciences sections. This was anticipated by the results in Tables 1 and 2. The omit rates on the verbal sections ranged from 2% to 4.8% whereas 2% was the maximum omit rate on any of the science tests. The overall mean raw score of 36.6 on the verbal reasoning test section is lower than the science tests mean raw scores (Table 23).

Since the verbal reasoning section of the MCAT is arranged around reading passages a comparison of items in different Forms (A vs. B) requires examining more than just the last five items of a test section. Table 41 compares Items 51-55 from Form 15A (both in 1994 and 1996) with Items 45-49 from Form 15B (from 1994). Table 41 Set 1 (Item 51 Form 15A and Item 45 Form 15B), for instance, shows that responses for this item generally follow the same pattern. However, item position does make a difference, slightly more (53.1%) examinees chose the correct option "A" as Item 45 then they did when it was Item 51 (47.5% and 52.3%). Even more interestingly, more examinees omitted the item when it was later in the test than in its earlier position (1.5% vs. 2.3% & 2.9%). Throughout the comparisons in Tables 41 and 42, the same item in a later position is omitted more often than when in an earlier position.

The comparisons of items on Forms 23A and 23B in Tables 45 and 46 provide additional convincing evidence of some speededness in both the pattern of omitted items, as well as answer choices. Throughout the tables, more examinees chose the correct answer options to the same items appearing earlier in the test, than the same item appearing among the last five items. Sometimes the differences in the proportions of examinees choosing the correct answers are quite marked. For example, Table 45 Set 3 shows 69.4% of examinees chose the correct answer for the earlier item versus 60.1% for the later one, a difference of 9.3%.

In addition, there is a striking difference in the omit rates between the items in early versus later positions in Forms 23A and 23B. In a conservative example, Table 46, Set 1 compares Item 39 Form 23A with Item 51 Form 23B with omits by 0.8% vs. 2.8% of examinees respectively. The item was omitted three times more often in its later position than in its earlier one. This relationship is consistent throughout Tables 45 and 46, with the ratios at times exceeding three. Clearly this is evidence of some degree of speededness in the verbal reasoning section of the MCAT.

Differences in Response Patterns among Various Groups

The responses of the various groups were compared on the last five items on all of the test sections to detect differential speededness or potential bias. Responses from the various ethnic groups, majors, test conditions, ESL, sex and repeater groups for Items 59-63 on the various biological and physical sciences tests were examined for evidence of differential speededness. However, these analyses provided no evidence of systematic differences between group responses that could be attributed to speededness.

Since the verbal reasoning analysis suggested an element of speededness in the last items which was especially apparent in the contrasts between earlier and later items, response patterns of race and sex groups are presented in Tables 47-51. For example, Table 47 compares race and sex group responses to Item 51, from 1996 Form 23A verbal reasoning section with responses to Item 37 from the 1996 Form 23B test.

The information presented in Tables 47-51 amplifies the contrasts between the groups and the differences between items in different positions in the verbal reasoning sections, but they do not reveal anything new. Consistently throughout the tables, black examinees omitted items in higher proportions than did whites or Asians. In Table 49 for example, 2.5% of black examinees omitted Item 39 about twice the proportion of the overall group (1.1%) and whites omitted the item less often than the overall sample (0.7%). On the other hand, Table 49 also shows that 7.7% of blacks omitted Item 53 (the same content). That is still twice as often as the whole cohort (3.4%). Two and a half percent of whites skipped the item, which again is less than the overall sample. In other words, three times as many blacks (proportionately) skipped the item in the earlier vs. later positions, going from 2.5% to 7.7%, and white examinees followed the same trend (0.7% to 2.5%). These patterns are repeated in omit columns of the rest of the tables in this group.

The differences between groups highlighted in Tables 47-51 seem to be a reflection of different performance levels on the test that were already highlighted in Tables 9-17, rather than any sort of differential speededness. Any speededness at the end of the verbal reasoning sections of the MCAT has similar consequences for each of the groups examined.

Split Half Reliabilities

As a final examination of speededness in the MCAT, the data sets were examined by computing split-half reliabilities. The 63 biological sciences and physical sciences items and the 55 verbal reasoning items were split two ways: odd numbered items and even items, and the first half of the test section versus the second half. In the absence of speededness, the expectation is that the correlation between items and thus the reliabilities of each half test should be the same no matter how the items are split. Any differences between the two split half reliabilities could be evidence of speededness, especially if the first/last reliability is lower than the odd/even reliability. In this analysis, correlations and Spearman Brown Prophecy formula reliabilities were estimated. In addition, Cronbach's alpha, which is the mean reliability of all possible splits, was also computed.

In the biological sciences and the physical sciences sections, not much difference was found between the two split-half reliabilities. For instance, in the 1996 Form 23B biology section, the odd/even reliability was 0.877 and the first/last reliability was 0.847, yielding a negligible difference of 0.03 (Table 52). Similarly small differences between reliabilities of 0.03, 0.04, or 0.05 are seen throughout Tables 52 and 53, which contain reliabilities for the biological and physical sciences test sections.

The verbal reasoning split half reliabilities yield some striking differences. The first/last reliabilities are consistently lower than the odd/even reliabilities. In Table 54, for instance, the reliability of the odd/even split for the 1996 Form 15A verbal reasoning section is 0.870, this falls to 0.734 for the first/last split: a decrease of 0.136.

These split half reliabilities were run for the four main ethnic groups to ascertain whether the differences in reliabilities at the end of the verbal reasoning test disadvantaged any particular group, as seen in Tables 55-59. Because of the higher item omission rates towards the end of the verbal reasoning test by black examinees, it was expected that they would have consistently larger differences in reliabilities. In fact, black examinees have lower correlations between test halves and lower reliabilities than white examinees in four out of the five tests examined. The one exception was verbal reasoning test Form 23B from 1996 (Table 59), where the correlations between test halves and the reliabilities for black examinees were slightly higher than for whites. However, in this instance, the absolute difference between the split half reliabilities was still slightly larger for blacks than whites: i.e., whites: 0.784-0.672=0.112, and blacks: 0.803-0.683=0.120. In fact, on this test, Hispanics had the overall lowest reliabilities among the four ethnic groups and the largest discrepancy between the split halves, with a difference of 0.155. Blacks and Hispanics, in general, had lower reliabilities and bigger differences in the split halves suggesting that they experience a differential effect of speededness at the end of the verbal reasoning section of the MCAT.

Summary and Conclusions

Throughout the analyses of these data, there has clearly been no evidence of speededness in the science sections of the MCAT. The initial frequency counts of omitted and "not reached" items, the analyses of possible guessing patterns of examinees, the search of for differences in items across forms, and the examination of the split half reliabilities all yielded negative results.

The verdict is not so clear on the verbal reasoning section of the MCAT. The patterns of omitted and "not reached" items, while within widely accepted limits, exceeded the proportions shown in the science tests. Patterns of guessing, in the strings of the last five responses, were also noticeable. Contrasts in response patterns for the same items in different positions and disagreements in split half reliabilities also suggested an element of speededness. Fortunately, the evidence is not glaring and does not violate normally accepted standards, as to cause immediate concern about the construct validity of the verbal reasoning section of the MCAT. In addition, whatever the level of speededness present in the test, there is no evidence that it differentially affects any particular group, at least among those examined in the context of this study.

References

American Institutes for Research. (1997). *Preliminary Speededness Analyses: August 1996 Administration.* Washington, DC: AAMC.

Anastasi, A. (1988). *Psychological Testing.* New York, NY: Macmillan.

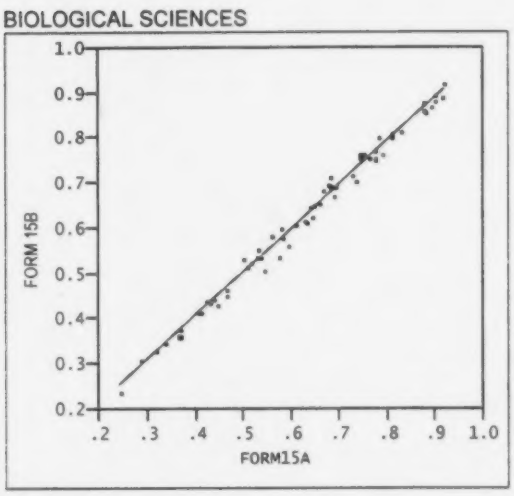

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Figure 1
Proportions of examinees getting an item correct in 1994 biological sciences graphed Form 15A by Form 15B

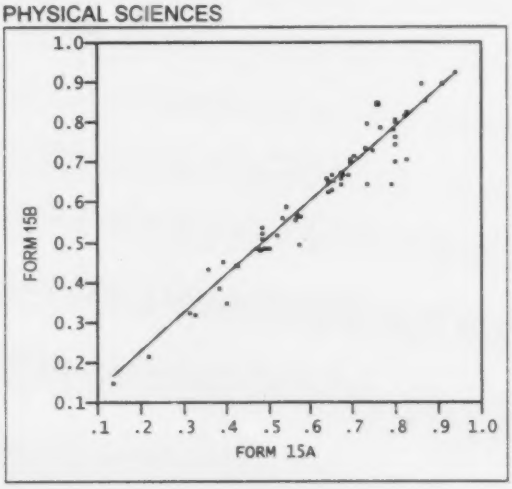

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Figure 2
Proportions of examinees getting an item correct in 1994 physical sciences graphed Form 15A by Form 15B

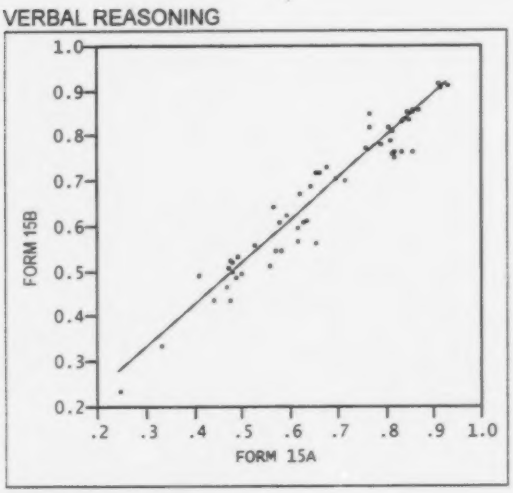

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Figure 3

Proportions of examinees getting an item correct in 1994 verbal reasoning graphed Form 15A by Form 15B

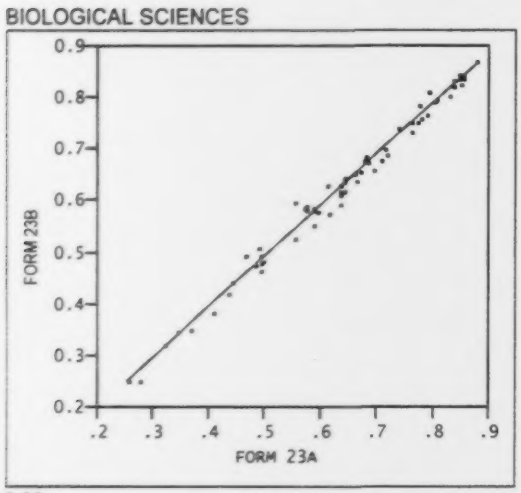

Figure 4
Proportions of examinees getting an item correct in 1996 biological sciences graphed Form 23A by Form 23B

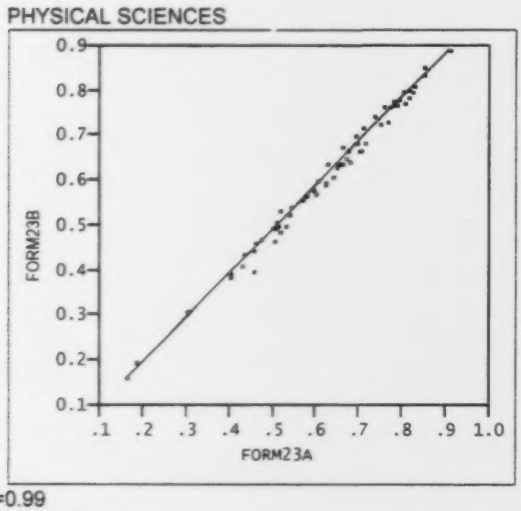

Figure 5
Proportions of examinees getting an item correct in 1996 physical sciences graphed Form 23A by Form 23B

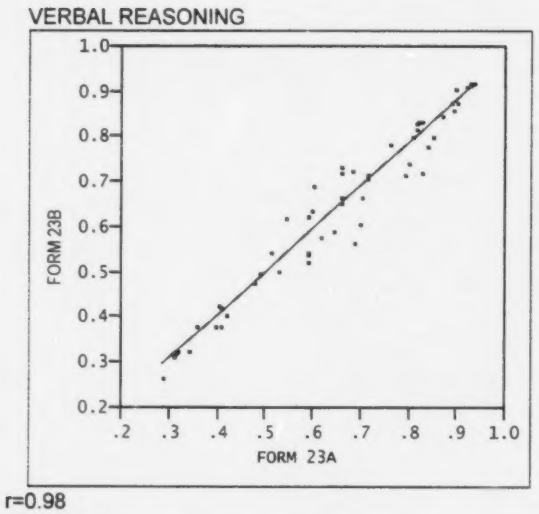

Figure 6
Proportions of examinees getting an item correct in 1996 verbal reasoning graphed Form 23A by Form 23B

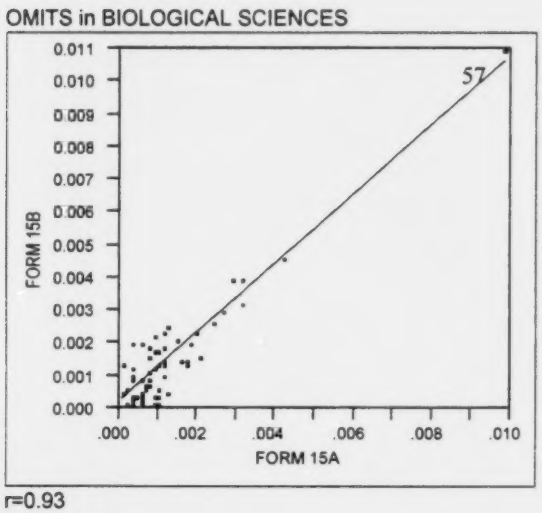

Figure 7

Proportions of examinees omitting an item in 1994 biological sciences graphed Form 15A by Form 15B

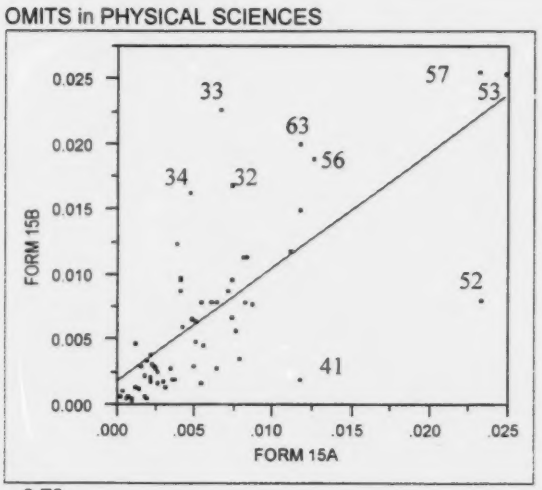

Figure 8

Proportions of examinees omitting an item in 1994 physical sciences graphed Form 15A by Form 15B

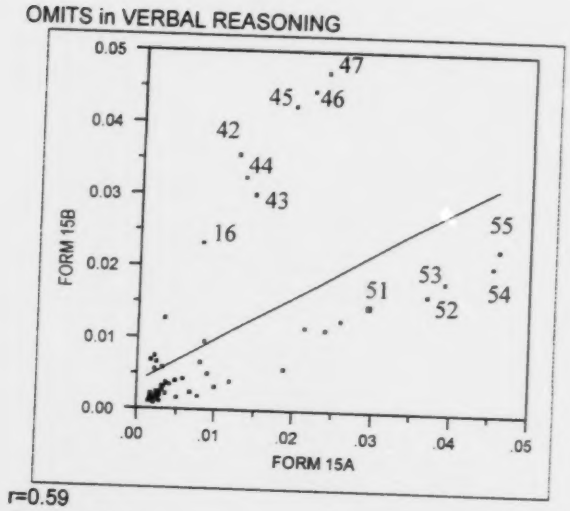

Figure 9

Proportions of examinees omitting an item in 1994 verbal reasoning graphed Form 15A by Form 15B

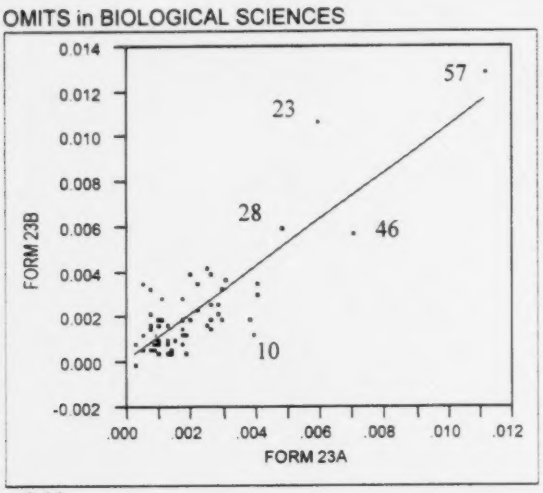

Figure 10
Proportions of examinees omitting an item in 1996 biological sciences graphed Form 23A by Form 23B

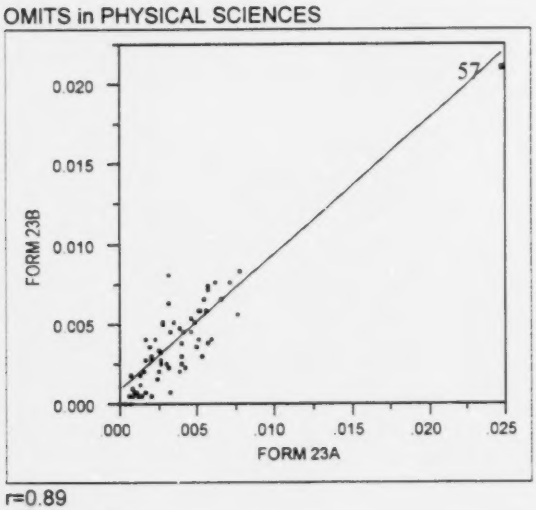

Figure 11
Proportions of examinees omitting an item in 1996 physical sciences graphed Form 23A by Form 23B

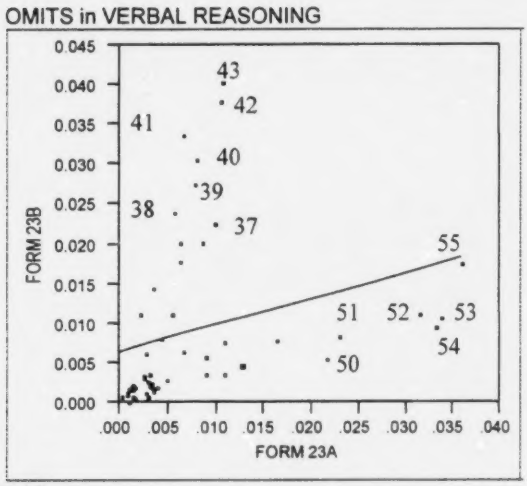

Figure 12

Proportions of examinees omitting an item in 1996 verbal reasoning graphed Form 23A by Form 23B

Table 1

Frequencies of items not reached by test section and test administration

		Biological Sciences	Physical Sciences	Verbal Reasoning
	Number of not reached	frequency percent	frequency percent	frequency percent
1996 Forms 23A and 23B N=12625	0	12611 99.9%	12559 99.5%	12149 96.2%
	1	4 >0.1%	11 0.1%	67 0.6%
	2	4 >0.1%	9 0.1%	39 0.3%
	3	1 >0.1%	8 0.1%	46 0.4%
	4	1 0.1%	3 >0.1%	56 0.5%
	5 or more	4 >0.1%	35 0.25%	268 2.0%
1996 Form 15A N=3638	0	3635 99.9%	3584 98.5%	3500 96.2%
	1	1 0.1%	22 0.6%	19 0.5%
	2	0	7 0.2%	16 0.4%
	3	0	3 0.1%	15 0.4%
	4	0	1 >0.1%	14 0.4%
	5 or more	0	21 0.6%	74 2.1%
1994 Forms 15A and 15B N=16520	0	16489 99.8%	16328 98.8%	15750 95.3%
	1	15 0.1%	58 0.4%	85 0.5%
	2	5 >0.1%	23 0.1%	89 0.5%
	3	2 >0.1%	16 0.1%	92 0.6%
	4	0	10 0.1%	71 0.4%
	5 or more	9 0.05%	85 0.5%	433 2.7%

Table 2
Frequencies of omitted items by test section and test administration

		Biological Sciences	Physical Sciences	Verbal Reasoning
	Number omitted	frequency percent	frequency percent	frequency percent
1996 Forms 23A and 23B N=12625	0	11663 92.4%	11378 90.1%	11171 88.5%
	1	713 5.6%	836 6.6%	677 5.4%
	2	138 1.1%	176 1.4%	210 1.7%
	3	43 0.3%	63 0.5%	119 0.9%
	4	10 0.1%	27 0.2%	100 0.8%
	5 or more	58 0.5%	145 1.2%	348 2.7%
1996 Form 15A N=3638	0	3487 95.8%	3124 85.9%	3184 87.5%
	1	121 3.3%	316 8.7%	216 5.9%
	2	14 0.4%	64 1.8%	75 2.1%
	3	5 0.1%	33 0.9%	37 1%
	4	2 0.1%	9 0.2%	24 0.7%
	5 or more	9 0.3%	92 2.5%	102 2.6%
1994 Forms 15A and 15B N=16520	0	15694 95%	14035 85%	14138 85.6%
	1	656 4%	1584 9.6%	1186 7.2%
	2	98 0.6%	365 2.2%	323 2%
	3	26 0.2%	141 0.9%	174 1.1%
	4	4 0%	88 0.5%	166 1%
	5 or more	42 0.15%	307 1.8%	533 3.1%

Table 3

Proportion of examinees omitting items in biological sciences section of 1994 MCAT, forms 15A and 15B.

Data points for Figure 7

Question number in Form A order	Proportion of examinees omitting item in Form A	Proportion of examinees omitting item in Form B	Absolute value of difference in proportions
SBSA01	0.0006	0.0020	0.0014
SBSA02	0.0002	0.0006	0.0004
SBSA03	0.0006	0.0004	0.0002
SBSA04	0.0008	0.0007	0.0001
SBSA05	0.0018	0.0014	0.0004
SBSA06	0.0012	0.0014	0.0002
SBSA07	0.0006	0.0001	0.0005
SBSA08	0.0002	0.0001	0.0001
SBSA09	0.0004	0.0002	0.0001
SBSA10	0.0006	0.0005	0.0001
SBSA11	0.0008	0.0016	0.0008
SBSA12	0.0004	0.0010	0.0006
SBSA13	0.0011	0.0001	0.0009
SBSA14	0.0005	0.0004	0.0001
SBSA15	0.0009	0.0017	0.0008
SBSA16	0.0004	0.0001	0.0002
SBSA17	0.0002	0.0006	0.0004
SBSA18	0.0007	0.0006	0.0001
SBSA19	0.0004	0.0004	0.0000
SBSA20	0.0007	0.0007	0.0000
SBSA21	0.0008	0.0009	0.0000
SBSA22	0.0019	0.0020	0.0001
SBSA23	0.0004	0.0002	0.0001
SBSA24	0.0006	0.0004	0.0002
SBSA25	0.0006	0.0002	0.0003
SBSA26	0.0001	0.0005	0.0004
SBSA27	0.0016	0.0015	0.0002
SBSA28	0.0001	0.0014	0.0013
SBSA29	0.0002	0.0006	0.0004
SBSA30	0.0004	0.0012	0.0009
SBSA31	0.0004	0.0020	0.0016
SBSA32	0.0013	0.0025	0.0012
SBSA33	0.0008	0.0016	0.0008
SBSA34	0.0012	0.0014	0.0002
SBSA35	0.0008	0.0011	0.0003
SBSA36	0.0006	0.0009	0.0003
SBSA37	0.0021	0.0016	0.0005

Table 3 (Continued)

SBSA38	0.0027	0.0030	0.0003
SBSA39	0.0006	0.0009	0.0003
SBSA40	0.0013	0.0005	0.0008
SBSA41	0.0011	0.0004	0.0007
SBSA42	0.0009	0.0004	0.0006
SBSA43	0.0011	0.0006	0.0004
SBSA44	0.0009	0.0001	0.0008
SBSA45	0.0012	0.0010	0.0002
SBSA46	0.0018	0.0015	0.0003
SBSA47	0.0012	0.0015	0.0003
SBSA48	0.0015	0.0021	0.0006
SBSA49	0.0004	0.0009	0.0005
SBSA50	0.0008	0.0019	0.0010
SBSA51	0.0012	0.0019	0.0007
SBSA52	0.0029	0.0040	0.0010
SBSA53	0.0025	0.0026	0.0001
SBSA54	0.0032	0.0032	0.0001
SBSA55	0.0032	0.0040	0.0008
SBSA56	0.0042	0.0046	0.0004
SBSA57	0.0099	0.0110	0.0011
SBSA58	0.0011	0.0017	0.0007
SBSA59	0.0009	0.0012	0.0003
SBSA60	0.0011	0.0014	0.0003
SBSA61	0.0009	0.0022	0.0013
SBSA62	0.0012	0.0024	0.0012
SBSA63	0.0020	0.0024	0.0004

Table 4

Proportion of examinees omitting items in physical sciences section of 1994 MCAT, Forms 15A and 15B.

Data points for Figure 8

Question Number in Form A order (variable name)	Proportion of examinees omitting item in Form A	Proportion of examinees omitting item in Form B	Absolute value of difference in proportions
SPSA01	0.0012	0.0049	0.0037
SPSA02	0.0015	0.0031	0.0016
SPSA03	0.0022	0.0032	0.0010
SPSA04	0.0021	0.0022	0.0001
SPSA05	0.0051	0.0066	0.0015
SPSA06	0.0042	0.0061	0.0019
SPSA07	0.0018	0.0009	0.0009
SPSA08	0.0007	0.0009	0.0002
SPSA09	0.0006	0.0006	0.0000
SPSA10	0.0064	0.0081	0.0017
SPSA11	0.0004	0.0012	0.0009
SPSA12	0.0018	0.0024	0.0006
SPSA13	0.0025	0.0030	0.0005
SPSA14	0.0019	0.0006	0.0013
SPSA15	0.0031	0.0015	0.0016
SPSA16	0.0012	0.0015	0.0003
SPSA17	0.0019	0.0035	0.0016
SPSA18	0.0073	0.0097	0.0024
SPSA19	0.0009	0.0005	0.0004
SPSA20	0.0021	0.0020	0.0001
SPSA21	0.0021	0.0040	0.0019
SPSA22	0.0034	0.0030	0.0004
SPSA23	0.0026	0.0027	0.0002
SPSA24	0.0035	0.0021	0.0014
SPSA25	0.0009	0.0006	0.0003
SPSA26	0.0002	0.0009	0.0006
SPSA27	0.0014	0.0014	0.0000
SPSA28	0.0041	0.0088	0.0047
SPSA29	0.0041	0.0097	0.0056
SPSA30	0.0039	0.0126	0.0087
SPSA31	0.0041	0.0098	0.0057
SPSA32	0.0073	0.0169	0.0096
SPSA33	0.0066	0.0228	0.0162
SPSA34	0.0047	0.0164	0.0117
SPSA35	0.0055	0.0047	0.0008
SPSA36	0.0054	0.0080	0.0026
SPSA37	0.0048	0.0067	0.0019
SPSA38	0.0060	0.0080	0.0020

Table 4 (Continued)

SPSA39	0.0087	0.0078	0.0009
SPSA40	0.0024	0.0031	0.0008
SPSA41	0.0118	0.0021	0.0097
SPSA42	0.0029	0.0020	0.0009
SPSA43	0.0026	0.0019	0.0007
SPSA44	0.0075	0.0059	0.0017
SPSA45	0.0049	0.0031	0.0018
SPSA46	0.0051	0.0050	0.0001
SPSA47	0.0036	0.0021	0.0015
SPSA48	0.0054	0.0019	0.0035
SPSA49	0.0064	0.0030	0.0034
SPSA50	0.0078	0.0037	0.0040
SPSA51	0.0078	0.0037	0.0040
SPSA52	0.0232	0.0082	0.0150
SPSA53	0.0248	0.0255	0.0007
SPSA54	0.0111	0.0120	0.0009
SPSA55	0.0117	0.0151	0.0034
SPSA56	0.0126	0.0191	0.0065
SPSA57	0.0231	0.0257	0.0026
SPSA58	0.0081	0.0115	0.0033
SPSA59	0.0071	0.0088	0.0018
SPSA60	0.0082	0.0080	0.0003
SPSA61	0.0073	0.0069	0.0004
SPSA62	0.0084	0.0115	0.0031
SPSA63	0.0118	0.0202	0.0084

Table 5

Proportion of examinees omitting items in the verbal reasoning section of 1994 MCAT, Forms 15A and 15B.

Data points for Figure 9

Question Number in Form A order	Proportion of examinees omitting item in Form A	Proportion of examinees omitting item in Form B	Absolute value of difference in proportions
SVRA01	0.0079	0.0071	0.0008
SVRA02	0.0019	0.0019	0.0000
SVRA03	0.0032	0.0036	0.0004
SVRA04	0.0029	0.0035	0.0005
SVRA05	0.0057	0.0045	0.0012
SVRA06	0.0025	0.0016	0.0009
SVRA07	0.0031	0.0030	0.0001
SVRA08	0.0022	0.0029	0.0006
SVRA09	0.0022	0.0020	0.0002
SVRA10	0.0047	0.0042	0.0005
SVRA11	0.0020	0.0059	0.0039
SVRA12	0.0020	0.0078	0.0058
SVRA13	0.0024	0.0069	0.0045
SVRA14	0.0016	0.0074	0.0057
SVRA15	0.0033	0.0130	0.0097
SVRA16	0.0079	0.0237	0.0158
SVRA17	0.0029	0.0032	0.0003
SVRA18	0.0016	0.0014	0.0003
SVRA19	0.0085	0.0100	0.0015
SVRA20	0.0024	0.0026	0.0003
SVRA21	0.0024	0.0026	0.0003
SVRA22	0.0027	0.0027	0.0000
SVRA23	0.0040	0.0037	0.0003
SVRA24	0.0020	0.0011	0.0009
SVRA25	0.0027	0.0015	0.0012
SVRA26	0.0027	0.0022	0.0005
SVRA27	0.0015	0.0020	0.0005
SVRA28	0.0015	0.0025	0.0010
SVRA29	0.0029	0.0062	0.0033
SVRA30	0.0118	0.0044	0.0074
SVRA31	0.0014	0.0015	0.0001
SVRA32	0.0020	0.0012	0.0008
SVRA33	0.0018	0.0017	0.0000
SVRA34	0.0036	0.0041	0.0005
SVRA35	0.0035	0.0025	0.0010
SVRA36	0.0051	0.0020	0.0031
SVRA37	0.0088	0.0055	0.0033
SVRA38	0.0077	0.0021	0.0055

Table 5 (Continued)

SVRA39	0.0066	0.0027	0.0039
SVRA40	0.0098	0.0036	0.0062
SVRA41	0.0186	0.0061	0.0125
SVRA42	0.0122	0.0359	0.0236
SVRA43	0.0144	0.0304	0.0160
SVRA44	0.0132	0.0328	0.0196
SVRA45	0.0193	0.0427	0.0234
SVRA46	0.0218	0.0449	0.0231
SVRA47	0.0235	0.0476	0.0240
SVRA48	0.0212	0.0121	0.0091
SVRA49	0.0239	0.0116	0.0123
SVRA50	0.0259	0.0130	0.0129
SVRA51	0.0294	0.0148	0.0146
SVRA52	0.0367	0.0167	0.0200
SVRA53	0.0391	0.0186	0.0205
SVRA54	0.0450	0.0211	0.0239
SVRA55	0.0457	0.0232	0.0225

Table 6

Proportion of examinees omitting items in the biological sciences section of 1996 MCAT, Forms 23A and 23B.

Data points for Figure10

Question Number in Form A order (variable name)	Proportion of examinees omitting item in Form A	Proportion of examinees omitting item in Form B	Absolute value of difference in proportions
SBSA01	0.0020	0.0040	0.0021
SBSA02	0.0009	0.0009	0.0000
SBSA03	0.0005	0.0007	0.0002
SBSA04	0.0022	0.0025	0.0002
SBSA05	0.0009	0.0007	0.0002
SBSA06	0.0041	0.0036	0.0005
SBSA07	0.0028	0.0027	0.0001
SBSA08	0.0017	0.0013	0.0004
SBSA09	0.0017	0.0009	0.0008
SBSA10	0.0039	0.0013	0.0026
SBSA11	0.0018	0.0013	0.0005
SBSA12	0.0012	0.0004	0.0008
SBSA13	0.0017	0.0016	0.0002
SBSA14	0.0012	0.0011	0.0001
SBSA15	0.0014	0.0007	0.0007
SBSA16	0.0007	0.0007	0.0001
SBSA17	0.0011	0.0029	0.0018
SBSA18	0.0010	0.0011	0.0001
SBSA19	0.0015	0.0011	0.0004
SBSA20	0.0014	0.0004	0.0009
SBSA21	0.0020	0.0020	0.0000
SBSA22	0.0026	0.0016	0.0010
SBSA23	0.0059	0.0107	0.0048
SBSA24	0.0005	0.0036	0.0031
SBSA25	0.0011	0.0020	0.0009
SBSA26	0.0007	0.0016	0.0008
SBSA27	0.0026	0.0027	0.0001
SBSA28	0.0048	0.0060	0.0012
SBSA29	0.0007	0.0022	0.0015
SBSA30	0.0010	0.0020	0.0010
SBSA31	0.0014	0.0007	0.0007
SBSA32	0.0012	0.0018	0.0006
SBSA33	0.0017	0.0029	0.0012
SBSA34	0.0038	0.0020	0.0018
SBSA35	0.0014	0.0007	0.0007
SBSA36	0.0010	0.0004	0.0005
SBSA37	0.0010	0.0011	0.0001
SBSA38	0.0002	0.0009	0.0006

Table 6 (Continued)

SBSA39	0.0002	0.0000	0.0002
SBSA40	0.0026	0.0020	0.0006
SBSA41	0.0018	0.0004	0.0014
SBSA42	0.0017	0.0013	0.0004
SBSA43	0.0010	0.0009	0.0001
SBSA44	0.0012	0.0011	0.0001
SBSA45	0.0029	0.0020	0.0009
SBSA46	0.0070	0.0058	0.0012
SBSA47	0.0007	0.0033	0.0026
SBSA48	0.0031	0.0038	0.0007
SBSA49	0.0026	0.0040	0.0014
SBSA50	0.0017	0.0020	0.0003
SBSA51	0.0025	0.0042	0.0018
SBSA52	0.0028	0.0022	0.0006
SBSA53	0.0029	0.0033	0.0004
SBSA54	0.0025	0.0018	0.0007
SBSA55	0.0041	0.0031	0.0009
SBSA56	0.0022	0.0036	0.0014
SBSA57	0.0112	0.0130	0.0018
SBSA58	0.0005	0.0013	0.0008
SBSA59	0.0028	0.0027	0.0001
SBSA60	0.0012	0.0009	0.0003
SBSA61	0.0009	0.0013	0.0005
SBSA62	0.0007	0.0018	0.0011
SBSA63	0.0010	0.0018	0.0008

Table 7

Proportion of examinees omitting items in the physical sciences section of 1996 MCAT, Forms 23A and 23B.

Data points for Figure 11

Question Number in Form A order (variable name)	Proportion of examinees omitting item in Form A	Proportion of examinees omitting item in Form B	Absolute value of difference in proportions
SPSA01	0.0012	0.0020	0.0008
SPSA02	0.0005	0.0007	0.0002
SPSA03	0.0050	0.0060	0.0010
SPSA04	0.0010	0.0009	0.0001
SPSA05	0.0045	0.0047	0.0001
SPSA06	0.0023	0.0018	0.0005
SPSA07	0.0009	0.0009	0.0000
SPSA08	0.0007	0.0007	0.0001
SPSA09	0.0012	0.0013	0.0001
SPSA10	0.0014	0.0007	0.0007
SPSA11	0.0006	0.0002	0.0004
SPSA12	0.0015	0.0022	0.0008
SPSA13	0.0007	0.0011	0.0004
SPSA14	0.0026	0.0027	0.0001
SPSA15	0.0016	0.0009	0.0007
SPSA16	0.0020	0.0031	0.0012
SPSA17	0.0016	0.0029	0.0013
SPSA18	0.0039	0.0031	0.0008
SPSA19	0.0053	0.0031	0.0022
SPSA20	0.0038	0.0022	0.0016
SPSA21	0.0076	0.0058	0.0018
SPSA22	0.0032	0.0009	0.0023
SPSA23	0.0034	0.0054	0.0019
SPSA24	0.0018	0.0038	0.0020
SPSA25	0.0022	0.0042	0.0020
SPSA26	0.0026	0.0033	0.0008
SPSA27	0.0038	0.0049	0.0011
SPSA28	0.0032	0.0047	0.0015
SPSA29	0.0027	0.0051	0.0024
SPSA30	0.0025	0.0036	0.0011
SPSA31	0.0031	0.0083	0.0052
SPSA32	0.0016	0.0042	0.0026
SPSA33	0.0027	0.0054	0.0027
SPSA34	0.0049	0.0038	0.0011
SPSA35	0.0020	0.0007	0.0013
SPSA36	0.0002	0.0002	0.0000
SPSA37	0.0006	0.0020	0.0014
SPSA38	0.0026	0.0029	0.0003

Table 7 (Continued)

SPSA39	0.0011	0.0007	0.0004
SPSA40	0.0025	0.0022	0.0002
SPSA41	0.0039	0.0027	0.0012
SPSA42	0.0055	0.0060	0.0005
SPSA43	0.0042	0.0025	0.0017
SPSA44	0.0056	0.0040	0.0016
SPSA45	0.0029	0.0027	0.0003
SPSA46	0.0059	0.0042	0.0016
SPSA47	0.0020	0.0029	0.0009
SPSA48	0.0052	0.0060	0.0009
SPSA49	0.0050	0.0042	0.0008
SPSA50	0.0031	0.0025	0.0006
SPSA51	0.0041	0.0047	0.0006
SPSA52	0.0065	0.0067	0.0002
SPSA53	0.0071	0.0078	0.0007
SPSA54	0.0061	0.0078	0.0017
SPSA55	0.0077	0.0085	0.0008
SPSA56	0.0056	0.0076	0.0019
SPSA57	0.0248	0.0212	0.0036
SPSA58	0.0031	0.0065	0.0034
SPSA59	0.0054	0.0067	0.0013
SPSA60	0.0039	0.0040	0.0001
SPSA61	0.0056	0.0074	0.0017
SPSA62	0.0048	0.0054	0.0006
SPSA63	0.0045	0.0056	0.0010

Table 8
Proportion of examinees omitting items in the verbal reasoning section of 1996 MCAT, Forms 23A and 23B.
Data points for Figure 12

Question Number in Form A order (variable name)	Average number of omits in Form A	Average number of omits in Form B	Absolute value of difference in proportions
SVRA01	0.0011	0.0018	0.0007
SVRA02	0.0009	0.0011	0.0003
SVRA03	0.0016	0.0007	0.0009
SVRA04	0.0015	0.0009	0.0006
SVRA05	0.0037	0.0018	0.0019
SVRA06	0.0037	0.0016	0.0021
SVRA07	0.0017	0.0020	0.0003
SVRA08	0.0011	0.0002	0.0009
SVRA09	0.0009	0.0013	0.0005
SVRA10	0.0032	0.0022	0.0010
SVRA11	0.0027	0.0033	0.0006
SVRA12	0.0033	0.0025	0.0009
SVRA13	0.0002	0.0009	0.0006
SVRA14	0.0015	0.0022	0.0008
SVRA15	0.0032	0.0038	0.0006
SVRA16	0.0039	0.0020	0.0019
SVRA17	0.0015	0.0020	0.0005
SVRA18	0.0028	0.0063	0.0034
SVRA19	0.0015	0.0018	0.0003
SVRA20	0.0012	0.0020	0.0008
SVRA21	0.0027	0.0031	0.0004
SVRA22	0.0043	0.0083	0.0040
SVRA23	0.0031	0.0009	0.0022
SVRA24	0.0028	0.0013	0.0015
SVRA25	0.0049	0.0029	0.0020
SVRA26	0.0039	0.0020	0.0019
SVRA27	0.0034	0.0020	0.0014
SVRA28	0.0029	0.0027	0.0003
SVRA29	0.0068	0.0065	0.0003
SVRA30	0.0055	0.0114	0.0059
SVRA31	0.0023	0.0114	0.0091
SVRA32	0.0036	0.0147	0.0112
SVRA33	0.0037	0.0147	0.0111
SVRA34	0.0064	0.0181	0.0117
SVRA35	0.0063	0.0203	0.0141
SVRA36	0.0087	0.0203	0.0116
SVRA37	0.0101	0.0228	0.0127

Table 8 (Continued)

SVRA38	0.0058	0.0241	0.0183
SVRA39	0.0079	0.0277	0.0198
SVRA40	0.0081	0.0308	0.0227
SVRA41	0.0068	0.0339	0.0272
SVRA42	0.0107	0.0382	0.0275
SVRA43	0.0108	0.0406	0.0298
SVRA44	0.0091	0.0058	0.0033
SVRA45	0.0091	0.0038	0.0053
SVRA46	0.0110	0.0078	0.0032
SVRA47	0.0110	0.0038	0.0073
SVRA48	0.0129	0.0047	0.0082
SVRA49	0.0164	0.0080	0.0084
SVRA50	0.0217	0.0056	0.0161
SVRA51	0.0231	0.0085	0.0146
SVRA52	0.0315	0.0114	0.0202
SVRA53	0.0339	0.0109	0.0229
SVRA54	0.0333	0.0096	0.0237
SVRA55	0.0361	0.0176	0.0184

Table 9

Response pattern data for biological sciences section of the 1994 Form 15 MCAT by group out of 63 items

	Rights		Wrongs		Omits	
	Mean	St Dev	Mean	St Dev	Mean	St Dev
Form 15A N=8494	39.78	9.04	23.14	9.00	0.08	0.58
Form 15B N=8026	39.77	9.55	23.14	9.51	0.09	0.74
Females N=7671	38.16	9.24	24.75	9.20	0.09	0.64
Males N=8733	41.24	9.10	21.68	9.05	0.07	0.68
First-time Takers (Non-repeaters) N=8841	39.90	10.01	22.99	9.96	0.10	0.77
Repeaters N=7679	39.63	8.39	23.31	8.36	0.07	0.50
Ethnic=Missing N=904	40.66	9.61	22.23	9.51	0.11	0.84
Ethnic=Asian N=3852	41.75	8.76	21.19	8.74	0.07	0.52
Ethnic=Black N=1394	30.49	8.40	32.23	8.42	0.27	1.63
Ethnic=Hispanic N=520	35.12	8.57	27.78	8.54	0.10	0.42
Ethnic=Other N=949	33.46	9.56	29.41	9.51	0.13	0.72
Ethnic=White N=8901	41.23	8.35	21.72	8.34	0.05	0.37
Major=Missing N=354	36.47	9.48	26.38	9.43	0.15	1.27
Major=Hum/SS N=2403	39.67	9.01	23.26	8.99	0.07	0.45
Major= "Other" N=1086	40.13	9.22	22.77	9.14	0.09	0.79
Major=Science N=12677	39.86	9.33	23.06	9.29	0.08	0.66
Special conditions N=126	42.33	8.37	20.63	8.37	0.04	0.20
Normal Conditions N=16394	39.76	9.30	23.16	9.25	0.08	0.66
ESL=Missing N=676	39.70	9.32	23.15	9.14	0.15	0.95
Not ESL N=14419	39.90	9.20	23.02	9.16	0.08	0.65
ESL N=1425	38.54	10.14	24.36	10.10	0.10	0.62

Table 10

Response pattern data for physical sciences section of the 1994 Form 15 MCAT by group out of 63 items

	Rights		Wrongs		Omits	
	Mean	St Dev	Mean	St Dev	Mean	St Dev
Form 15A N=8494	38.52	9.58	24.12	9.47	0.35	1.66
Form 15B N=8026	38.86	10.08	23.72	9.97	0.42	1.78
Females N=7671	36.31	9.40	26.23	9.32	0.46	1.90
Males N=8733	40.82	9.71	21.86	9.60	0.32	1.54
First-time Takers (Non-repeaters) N=8841	39.17	10.57	23.36	10.42	0.46	2.03
Repeaters N=7679	38.13	8.86	24.57	8.79	0.30	1.27
Ethnic=Missing N=904	39.76	10.18	22.82	10.00	0.42	1.82
Ethnic=Asian N=3852	41.85	9.49	20.84	9.36	0.31	1.34
Ethnic=Black N=1394	29.15	8.00	32.92	8.29	0.93	3.27
Ethnic=Hispanic N=520	32.81	8.36	29.68	8.52	0.51	2.00
Ethnic=Other N=949	31.83	9.32	30.59	9.22	0.58	2.41
Ethnic=White N=8901	39.77	8.92	22.92	8.86	0.30	1.34
Major=Missing N=354	32.66	9.64	27.85	9.57	0.77	2.81
Major=Hum/SS N=2403	38.77	9.37	23.82	9.22	0.42	1.74
Major= "Other" N=1086	39.00	9.49	23.65	9.38	0.35	1.71
Major=Science N=12677	38.75	9.92	23.86	9.82	0.38	1.73
Special conditions N=126	42.38	8.88	20.52	8.83	0.10	0.37
Normal Conditions N=16394	38.66	9.38	23.95	9.72	0.39	1.73
ESL=Missing N=676	38.45	9.99	24.00	9.68	0.57	2.39
Not ESL N=14419	38.65	9.72	23.97	9.62	0.37	1.67
ESL N=1425	39.15	10.83	23.40	10.64	0.45	1.88

Table 11
Response pattern data for verbal reasoning section of the 1994 Form 15 MCAT by group out of 55 items

	Rights		Wrongs		Omits	
	Mean	St Dev	Mean	St Dev	Mean	St Dev
Form 15A N=8494	36.62	8.09	17.83	7.85	0.55	2.16
Form 15B N=8026	37.15	8.64	17.30	8.38	0.54	2.20
Females N=7671	36.66	8.45	17.69	8.13	0.64	2.35
Males N=8733	37.11	8.28	17.43	8.09	0.45	1.98
First-time Takers (Non-repeaters) N=8841	37.27	8.99	17.04	8.65	0.68	2.50
Repeaters N=7679	36.43	7.56	18.18	7.41	0.39	1.72
Ethnic=Missing N=904	37.33	8.86	17.09	8.56	0.57	2.30
Ethnic=Asian N=3852	36.35	8.12	18.15	7.98	0.49	1.91
Ethnic=Black N=1394	29.91	8.01	23.59	7.99	1.50	3.93
Ethnic=Hispanic N=520	32.86	8.34	21.32	8.22	0.81	2.84
Ethnic=Other N=949	30.83	9.13	23.08	8.96	1.08	3.62
Ethnic=White N=8901	39.03	7.29	15.62	7.15	0.34	1.47
Major=Missing N=354	34.01	9.29	20.21	9.05	0.73	2.68
Major=Hum/SS N=2403	39.52	7.78	15.06	7.58	0.42	1.74
Major= "Other" N=1086	38.35	8.46	16.10	8.15	0.55	2.31
Major=Science N=12677	36.33	8.32	18.10	8.07	0.56	2.22
Special conditions N=126	40.82	7.12	14.12	7.12	0.056	0.46
Normal Conditions N=16394	36.85	8.37	17.60	8.12	0.51	2.07
ESL=Missing N=676	35.89	8.29	18.35	7.96	0.75	2.73
Not ESL N=14419	37.59	8.07	16.89	7.82	0.47	1.93
ESL N=1425	30.19	8.32	24.05	8.26	0.70	2.57

Table 12
Response pattern data for biological sciences section of the 1996 Form 15 MCAT by group out of 63 items

	Rights		Wrongs		Omits	
	Mean	St Dev	Mean	St Dev	Mean	St Dev
Form 15A N=3638	41.00	9.28	21.93	9.24	0.07	0.49
Females N=1678	39.10	9.15	23.82	9.11	0.08	0.53
Males N=1959	42.62	9.07	20.13	9.04	0.06	0.46
First-time Takers (Non-repeaters) N=2111	41.23	9.81	21.70	9.78	0.06	0.44
Repeaters N=1527	40.69	8.47	22.24	8.42	0.07	0.55
Ethnic=Missing N=166	44.49	8.70	18.48	8.67	0.03	0.17
Ethnic=Asian N=873	43.17	9.18	19.77	9.17	0.07	0.41
Ethnic=Black N=319	30.92	8.23	31.82	8.15	0.25	1.04
Ethnic=Hispanic N=110	38.10	9.20	24.82	9.20	0.07	0.35
Ethnic=Other N=112	39.43	9.00	23.44	8.94	0.13	0.88
Ethnic=White N=2058	41.61	8.45	21.35	8.44	0.04	0.37
Major=Missing N=34	36.76	10.22	26.15	10.20	0.09	0.29
Major=Hum/SS N=460	39.62	8.99	23.30	8.91	0.08	0.69
Major= "Other" N=205	41.92	9.17	21.06	9.18	0.01	0.16
Major=Science N=2939	41.21	9.29	21.72	9.25	0.07	0.47
Special conditions N=33	44.67	7.35	18.33	7.35	0	0
Normal Conditions N=3605	40.97	9.29	21.96	7.25	0.07	0.50
ESL=Missing N=122	40.57	9.06	22.43	9.05	0	0
Not ESL N=3290	41.09	9.21	21.85	9.17	0.07	0.49
ESL N=226	40.03	10.24	22.85	10.21	0.12	0.66

Table 13

Response pattern data for physical sciences section of the 1996 Form 15 MCAT by group out of 63 items

	Rights		Wrongs		Omits	
	Mean	St Dev	Mean	St Dev	Mean	St Dev
Form 15A N=3638	39.20	9.92	23.38	9.79	0.41	1.89
Females N=1678	36.53	9.41	25.91	9.28	0.55	2.38
Males N=1959	41.48	9.79	21.21	9.70	0.30	1.47
First-time Takers (Non-repeaters) N=2111	38.31	9.03	24.35	8.87	0.33	1.53
Repeaters N=1527	39.84	10.48	22.67	10.36	0.48	2.20
Ethnic=Missing N=166	43.49	9.84	18.93	9.72	0.59	2.14
Ethnic=Asian N=873	43.04	9.95	19.63	9.76	0.33	1.38
Ethnic=Black N=319	28.72	7.78	33.45	7.82	0.82	3.15
Ethnic=Hispanic N=110	35.68	8.23	26.78	8.08	0.54	2.16
Ethnic=Other N=112	35.73	9.97	26.74	9.88	0.51	2.57
Ethnic=White N=2058	39.23	8.95	23.40	8.88	0.37	1.83
Major=Missing N=34	34.35	10.34	26.76	10.60	1.88	4.21
Major=Hum/SS N=460	38.02	9.27	24.52	9.07	0.46	2.22
Major= "Other" N=205	39.36	9.41	23.36	9.36	0.28	0.98
Major=Science N=2939	39.43	10.03	23.16	9.91	0.40	1.91
Special conditions N=33	43.67	7.96	18.97	8.32	0.36	1.92
Normal Conditions N=3605	39.16	9.93	23.42	9.80	0.42	1.95
ESL=Missing N=122	39.17	10.05	23.43	9.89	0.39	1.35
Not ESL N=3290	39.16	9.91	23.42	9.79	0.42	1.99
ESL N=226	39.81	10.12	22.74	9.82	0.45	1.66

Table 14

Response pattern data for verbal reasoning section of the 1996 Form 15 MCAT by group out of 55 items

	Rights		Wrongs		Omits	
	Mean	St Dev	Mean	St Dev	Mean	St Dev
Form 15A N=3638	37.95	8.11	16.61	7.97	0.44	1.79
Females N=1678	37.66	8.08	16.81	7.90	0.52	2.01
Males N=1959	38.19	8.14	16.44	8.03	0.37	1.57
First-time Takers (Non-repeaters) N=2111	38.15	8.45	16.34	8.29	0.50	1.92
Repeaters N=1527	37.67	7.61	16.97	7.50	0.35	1.59
Ethnic=Missing N=166	41.07	7.99	13.51	7.75	0.42	2.05
Ethnic=Asian N=873	37.18	8.26	17.38	8.18	0.44	1.86
Ethnic=Black N=319	30.66	8.07	23.24	8.12	1.09	2.77
Ethnic=Hispanic N=110	35.44	8.21	18.77	7.89	0.77	2.70
Ethnic=Other N=112	36.80	7.62	17.54	7.42	0.65	2.31
Ethnic=White N=2058	39.35	7.34	15.34	7.28	0.31	1.38
Major=Missing N=34	34.88	9.06	18.21	8.97	1.91	4.93
Major=Hum/SS N=460	39.95	7.88	14.69	7.55	0.35	1.56
Major= "Other" N=205	39.80	7.82	14.99	7.69	0.21	1.15
Major=Science N=2939	37.54	8.09	17.00	7.99	0.45	1.66
Special conditions N=33	42.76	5.17	12.18	5.10	0.06	0.35
Normal Conditions N=3605	37.91	8.12	16.65	7.98	0.44	1.80
ESL=Missing N=122	35.61	7.58	19.17	7.51	0.22	0.65
Not ESL N=3290	38.50	7.89	16.06	7.74	0.43	1.80
ESL N=226	31.21	8.37	23.19	8.40	0.60	2.06

Table 15

Response pattern data for biological sciences section of the 1996 Form 23 MCAT by group out of 63 items

	Rights		Wrongs		Omits	
	Mean	St Dev	Mean	St Dev	Mean	St Dev
Form 23A N=8147	40.32	9.40	22.55	9.34	0.13	0.73
Form 23B N=4478	39.84	9.64	23.02	9.56	0.14	0..84
Females N=5958	38.72	9.44	24.13	9.37	0.15	0.86
Males N=6664	41.43	9.35	21.45	9.29	0.12	0.69
First-time Takers (Non-repeaters) N=7300	40.48	10.07	22.38	10.00	0.14	0.79
Repeaters N=5325	39.70	8.60	23.18	8.55	0.12	0.74
Ethnic=Missing N=683	42.83	9.59	20.00	9.48	0.17	1.04
Ethnic=Asian N=2853	42.87	9.07	20.00	9.02	0.13	0.69
Ethnic=Black N=1086	31.73	8.28	30.93	8.31	0.34	1.40
Ethnic=Hispanic N=381	34.29	8.42	28.43	8.36	0.28	1.05
Ethnic=Other N=909	32.37	9.70	30.39	9.62	0.24	1.28
Ethnic=White N=6713	41.47	8.36	21.46	8.33	0.08	0.43
Major=Missing N=181	36.49	10.40	26.39	10.37	0.12	0.38
Major=Hum/SS N=1812	39.86	9.00	23.00	8.94	0.13	0.81
Major= "Other" N=732	40.46	10.03	22.36	9.91	0.18	1.14
Major=Science N=9900	40.24	9.50	22.63	9.44	0.13	0.73
Special conditions N=163	41.69	8.32	21.25	8.30	0.06	0.24
Normal Conditions N=12462	40.13	9.50	22.74	9.43	0.13	0.77
ESL=Missing N=517	39.53	9.18	23.31	9.10	0.17	0.65
Not ESL N=11070	40.42	9.36	22.45	9.30	0.13	0.76
ESL N=1038	37.52	10.51	25.28	10.45	0.20	0.89

Table 16

Response pattern data for physical sciences section of the 1996 Form 23 MCAT by group out of 63 items

	Rights		Wrongs		Omits	
	Mean	St Dev	Mean	St Dev	Mean	St Dev
Form 23A N=8147	39.37	9.53	23.40	9.43	0.23	1.26
Form 23B N=4478	38.72	9.70	24.03	9.57	0.25	1.45
Females N=5958	36.77	9.22	25.95	9.11	0.28	1.51
Males N=6664	41.27	9.42	21.54	9.32	0.19	1.15
First-time Takers (Non-repeaters) N=7300	39.65	10.15	23.08	8.66	0.26	1.41
Repeaters N=5325	38.44	8.73	24.35	10.00	0.20	1.22
Ethnic=Missing N=682	42.28	10.03	20.41	9.80	0.31	1.82
Ethnic=Asian N=2853	42.57	8.98	20.20	8.85	0.23	1.35
Ethnic=Black N=1086	30.82	7.95	31.67	7.92	0.50	1.92
Ethnic=Hispanic N=381	33.13	8.61	29.45	8.52	0.42	2.05
Ethnic=Other N=909	31.17	9.11	31.44	9.03	0.39	1.93
Ethnic=White N=6713	40.13	8.61	22.71	8.55	0.16	0.93
Major=Missing N=181	35.76	9.60	27.08	9.57	0.15	0.63
Major=Hum/SS N=1812	39.28	8.91	23.46	8.80	0.26	1.40
Major= "Other" N=732	39.69	9.76	22.97	9.59	0.34	1.93
Major=Science N=9900	39.13	9.68	23.64	9.58	0.23	1.27
Special conditions N=163	40.96	8.22	21.87	8.14	0.17	1.28
Normal Conditions N=12462	39.11	9.61	23.65	9.50	0.24	1.33
ESL=Missing N=517	39.34	9.43	23.36	9.19	0.30	1.37
Not ESL N=11070	39.25	9.51	23.52	9.41	0.23	1.29
ESL N=1038	37.91	10.48	24.79	10.33	0.30	1.68

Table 17

Response pattern data for verbal reasoning section of the 1996 Form 23 MCAT by group out of 55 items

	Rights		Wrongs		Omits	
	Mean	St Dev	Mean	St Dev	Mean	St Dev
Form 23A N=8147	36.02	7.56	18.56	7.35	0.42	1.89
Form 23B N=4478	35.67	7.86	18.82	7.57	0.50	2.26
Females N=5958	35.61	7.85	18.85	7.56	0.54	2.27
Males N=6664	36.15	7.50	18.47	7.31	0.37	1.79
First-time Takers (Non-repeaters) N=7300	36.14	8.08	18.29	7.76	0.56	2.31
Repeaters N=5325	35.56	7.07	19.14	6.93	0.29	1.57
Ethnic=Missing N=683	37.75	7.76	16.71	7.35	0.53	2.32
Ethnic=Asian N=2853	35.79	7.37	18.80	7.22	0.41	1.75
Ethnic=Black N=1086	30.41	7.33	23.47	7.19	1.11	3.45
Ethnic=Hispanic N=381	31.38	7.57	23.01	7.45	0.61	2.44
Ethnic=Other N=909	28.97	8.58	25.09	8.31	0.94	3.49
Ethnic=White N=6713	37.83	6.56	16.89	6.44	0.28	1.37
Major=Missing N=181	33.33	8.62	21.02	8.17	0.65	2.41
Major=Hum/SS N=1812	38.20	7.05	17.65	6.86	0.31	1.50
Major= "Other" N=732	37.02	8.00	17.51	7.68	0.47	2.28
Major=Science N=9900	35.44	7.65	19.09	7.42	0.45	2.09
Special conditions N=163	37.04	6.52	17.80	6.44	0.16	0.87
Normal Conditions N=12462	35.88	7.69	18.66	7.44	0.45	2.04
ESL=Missing N=517	34.44	7.82	20.23	7.60	0.32	1.52
Not ESL N=11070	36.53	7.36	18.04	7.13	0.43	1.93
ESL N=1038	29.87	8.11	24.40	7.92	0.73	3.05

Table 18

Selected patterns of responses for the last five items in each section of the 1994 form 15A MCAT, overall number of examinees: 8494

	Biological Sciences "DDDDA"		Physical Sciences "ADACB"		Verbal Reasoning "ADCCB"	
Response string	N Percent	Mean Raw Score (BS)	N Percent	Mean Raw Score (PS)	N Percent	Mean Raw Score (VR)
Correct	413 4.9%	50.1	462 5.4	52.4	1159 13.6	44.6
All omits	2 <0.1%	15.0	43 0.5%	27.4	219 2.6%	28.0
AAAAA	1 <0.1%	NA	15 0.2%	31.0	58 0.7%	31.8
BBBBB	3 <0.1%	19.0	36 0.4%	29.5	288 3.4%	30.3
CCCCC	10 0.1%	28.2	53 0.6%	30.3	317 3.7%	30.9
DDDDD	50 0.6%	43.1	13 0.2%	31.4	64 0.8%	30.6

Table 19

Selected patterns of responses for the last five items in each section of the 1994 Form 15B MCAT, overall number of examinees: 8026

	Biological Sciences "DDADB"		Physical Sciences "AABCD"		Verbal Reasoning "AADCA"	
Response string	N Percent	Mean Raw Score (BS)	N Percent	Mean Raw Score (PS)	N Percent	Mean Raw Score (VR)
Correct	574 7.2%	50.6	459 5.7%	53.6	382 4.8%	48.1
All omits	7 0.1%	23.7	42 0.5%	27.4	214 2.7%	28.1
AAAAA	3 <0.1%	29.7	9 0.1%	33.8	61 0.8%	33.5
BBBBB	1 <0.1%	NA	27 0.3%	31.6	294 3.7%	30.0
CCCCC	9 0.1%	25.7	27 0.3%	29.4	327 4.1%	30.5
DDDDD	8 0.1%	35.3	7 0.1%	35.4	56 0.7%	30.8

Table 20

Selected patterns of responses for the last five items in each section of the 1996 Form 15A MCAT, overall number of examinees: 3638

	Biological Sciences "DDDDA"		Physical Sciences "ADACB"		Verbal Reasoning "ADCCB"	
Response string	N Percent	Mean Raw Score (BS)	N Percent	Mean Raw Score (PS)	N Percent	Mean Raw Score (VR)
Correct	236 6.5%	52.1	264 7.3%	53.9	649 17.8%	45.6
All omits	0	NA	21 0.6%	31.1	74 2.0%	31.2
AAAAA	0	NA	4 0.1%	30.8	16 0.4%	34.1
BBBBB	1 <0.1%	NA	11 0.3%	32.1	63 1.7%	31.7
CCCCC	3 0.1%	28.3	12 0.3%	35.1	110 3.0%	31.6
DDDDD	18 0.5%	47.0	18 0.5%	35.5	18 0.5%	32.3

Table 21

Selected patterns of responses for the last five items in each section of the 1996 Form 23A MCAT, overall number of examinees: 8147

	Biological Sciences "DCBBC"		Physical Sciences "BDAAA"		Verbal Reasoning "BCDAD"	
Response string	N Percent	Mean Raw Score (BS)	N Percent	Mean Raw Score (PS)	N Percent	Mean Raw Score (VR)
Correct	3088 37.9%	45.9	677 8.3%	49.2	1771 21.7%	42.7
All omits	2 <0.1%	23.5	22 0.3%	25.3	158 1.9%	27.2
AAAAA	1 <0.1%	NA	28 0.3%	40.4	68 0.8%	29.9
BBBBB	5 0.1%	26.4	27 0.3%	28.8	248 3.0%	30.6
CCCCC	8 0.1%	24.8	41 0.5%	28.1	284 3.5%	30.6
DDDDD	1 <0.1%	NA	7 0.1%	26.7	52 0.6%	28.5

Table 22

Selected patterns of responses for the last five items in each section of the 1996 Form 23B MCAT, overall number of examinees: 4478

	Biological Sciences "BDCBB"		Physical Sciences "ABAAA"		Verbal Reasoning "CABBD"	
Response string	N Percent	Mean Raw Score (BS)	N Percent	Mean Raw Score (PS)	N Percent	Mean Raw Score (VR)
Correct	1632 36.4%	46.3	621 13.9%	47.5	151 3.4%	45.3
All omits	2 <0.1%	13.5	13 0.3%	21.5	110 2.5%	25.0
AAAAA	1 <0.1%	NA	41 0.9%	37.8	42 0.9%	30.5
BBBBB	3 <0.1%	33.0	17 0.4%	28.5	151 3.4%	31.5
CCCCC	10 0.1%	26.8	21 0.5%	27.1	156 3.5%	30.3
DDDDD	1 <0.1%	NA	1 <0.1%	NA	26 0.6%	28.5

Table 23
Mean raw test section score by subject, form and year.

Year/ Test	Number of examinees	Biological Sciences	Physical Sciences	Verbal Reasoning
1994 Form 15A	8494	40.3	38.5	36.6
1994 Form 15B	8026	39.8	38.9	37.2
1996 Form 15A	3638	41.0	39.2	38.0
1996 Form 23A	8147	40.3	39.4	36.0
1996 Form 23B	4478	39.8	38.7	35.7
Overall Mean:		40.2	38.9	36.6

Table 24

Response patterns to last 5 items of 1994 biological sciences test, Form 15A, overall number of examinees: 8494

Item	Omit		A		B		C		D	
	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean
59	8 0.1%	25.5	1969 23.2%	35.9	232 2.7%	33.3	596 7.0%	33.3	[illegible]	[illegible]
60	9 0.1%	31.6	631 7.4%	32.0	1300 15.3%	35.1	1682 19.8%	38.5	[illegible]	[illegible]
61	8 0.1%	26.6	411 4.8%	36.4	729 8.6%	35.0	3091 36.4%	36.2	[illegible]	[illegible]
62	10 0.1%	31.1	1555 18.3%	40.6	610 7.2%	34.5	2592 30.5%	38.8	[illegible]	[illegible]
63	17 0.2%	34.9	[illegible]	[illegible]	1306 15.4%	37.8	3640 42.9%	38.1	655 7.7%	36.6

Table 25

Response patterns to last 5 items of 1994 biological sciences test, Form 15B, overall number of examinees: 8026

Item	Omit		A		B		C		D	
	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean
59	18 0.2%	35.2	351 4.4%	35.8	664 8.3%	34.6	2707 33.7%	35.5	[illegible]	[illegible]
60	10 0.1%	25.7	1707 21.3%	34.6	248 3.1%	32.6	556 6.9%	32.9	[illegible]	[illegible]
61	19 0.2%	31.2	[illegible]	[illegible]	1285 16.0%	37.3	3353 41.8%	37.7	563 7.0%	36.0
62	19 0.2%	29.4	1385 17.3%	40.5	671 8.4%	34.3	2360 29.4%	38.7	[illegible]	[illegible]
63	14 0.2%	30.5	723 34.8%	34.8	[illegible]	[illegible]	565 7.0%	34.0	1324 16.5%	34.6

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Table 26

Response patterns to last 5 items of 1996 biological sciences test, Form 15A, overall number of examinees: 3638

Item	Omit		A		B		C		D	
	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean
59	1 0.0%	NA	681 18.7%	36.0	103 2.8%	32.2	232 6.4%	32.6	2621 72.0%	43.4
60	3 0.1%	40.7	270 7.4%	32.9	501 13.8%	35.9	743 20.4%	39.6	2121 58.3%	43.7
61	4 0.1%	41.3	162 4.5%	35.8	284 7.8%	34.7	1209 33.2%	37.2	1979 54.4%	44.7
62	2 0.1%	28.5	664 18.3%	41.3	273 7.5%	35.4	1084 29.8%	40.1	1615 44.4%	43.4
63	3 0.1%	35.3	1299 35.7%	45.3	526 14.5%	38.5	1566 43.0%	38.4	244 6.7%	37.0

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Table 27

Comparable items in Forms 15A and 15B of the 1994 and 1996 biological sciences test

Item	Omit		A		B		C		D	
Set 1	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean
Item 59 '94 Form 15A	8 0.1%	25.5	1969 23.2%	35.9	232 2.7%	33.3	596 7.0%	33.3	5689 67.0%	42.1
Item 60 '94 Form 15B	10 0.1%	25.7	1707 21.3%	34.6	248 3.1%	32.6	556 6.9%	32.9	5505 68.6%	42.4
Item 59 '96 Form 15A	1 0.0%	NA	681 18.7%	36.0	103 2.8%	32.2	232 6.4%	32.6	2621 72.0%	43.4
Set 2										
Item 61 '94 Form 15A	8 0.1%	26.6	411 4.8%	36.4	729 8.6%	35.0	3091 36.4%	36.2	4255 50.1%	43.3
Item 59 '94 Form 15B	18 0.2%	35.2	351 4.4%	35.8	664 8.3%	34.6	2707 33.7%	35.5	4286 53.4%	43.6
Item 61 '96 Form 15A	4 0.1%	41.3	162 4.5%	35.8	284 7.8%	34.7	1209 33.2%	37.2	1979 54.4%	44.7
Set 3										
Item 62 '94 Form 15A	10 0.1%	31.1	1555 18.3%	40.6	610 7.2%	34.5	2592 30.5%	38.8	3727 43.9%	41.0
Item 62 '94 Form 15B	19 0.2%	29.4	1385 17.3%	40.5	671 8.4%	34.3	2360 29.4%	38.7	3591 44.7%	41.3
Item 62 '96 Form 15A	2 0.1%	28.5	664 18.3%	41.3	273 7.5%	35.4	1084 29.8%	40.1	1615 44.4%	43.4
Set 4										
Item 63 '94 Form 15A	17 0.2%	34.9	2876 33.9%	43.6	1306 15.4%	37.8	3640 42.9%	38.1	655 7.7%	36.6
Item 61 '94 Form 15B	19 0.2%	31.2	2806 35.0%	44.1	1285 16.0%	37.3	3353 41.8%	37.7	563 7.0%	36.0
Item 63 '96 Form 15A	3 0.1%	35.3	1299 35.7%	45.3	526 14.5%	38.5	1566 43.0%	38.4	244 6.7%	37.0

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Table 28

Response patterns to last 5 items of 1996 biological sciences test, Form 23A, overall number of examinees: 8147

Item	Omit		A		B		C		D	
	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean
59	23 0.3%	34.6	274 3.4%	31.0	590 7.2%	32.5	970 11.9%	34.8	*6290* *77.2%*	*42.33*
60	10 0.1%	34.0	428 5.3%	36.9	649 8.0%	35.5	*6959* *85.4%*	*41.1*	101 1.2%	31.1
61	7 0.1%	32.9	1176 14.4%	37.7	*5477* *67.2%*	*42.6*	986 12.1%	35.9	501 6.1%	30.0
62	6 0.1%	27.5	558 6.8%	33.0	*6921* *85.0%*	*41.7*	156 1.9%	31.7	506 6.2%	33.0
63	8 0.1%	30.9	617 7.6%	36.4	332 4.1%	34.3	*6436* *79.0%*	*41.8*	754 9.3%	33.9

Table 29

Response patterns to last 5 items of 1996 biological sciences test, Form 23B, overall number of examinees: 4478

Item	Omit		A		B		C		D	
	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean
59	6 0.1%	30.0	605 13.5%	36.1	*2947* *65.8%*	*42.5*	598 13.4%	35.7	322 7.2%	30.4
60	12 0.3%	31.3	179 4.0%	30.9	357 8.0%	33.4	552 12.3%	33.7	*3378* *75.4%*	*42.0*
61	8 0.2%	32.0	389 8.7%	35.6	211 4.7%	35.0	*3443* *76.9%*	*41.5*	427 9.5%	32.8
62	8 0.2%	29.4	351 7.8%	33.9	*3705* *82.7%*	*41.3*	101 2.3%	28.9	313 7.0%	32.5
63	6 0.1%	24.2	223 5.0%	31.1	*3745* *83.6%*	*41.5*	375 8.4%	31.8	129 2.9%	30.1

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Table 30

Comparable items in Forms 23A and 23B of the 1996 biological sciences test

Item	Omit		A		B		C		D	
Set 1	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean
Item 59 '96 Form 23A	23 0.3%	34.6	274 3.4%	31.0	590 7.2%	32.5	970 11.9%	34.8	6290 77.2%	42.33
Item 60 '96 Form 23B	12 0.3%	31.3	179 4.0%	30.9	357 8.0%	33.4	552 12.3%	33.7	3378 75.4%	42.0
Set 2										
Item 61 '96 Form 23A	7 0.1%	32.9	1176 14.4%	37.7	5477 67.2%	42.6	986 12.1%	35.9	501 6.1%	30.0
Item 59 '96 Form 23B	6 0.1%	30.0	605 13.5%	36.1	2947 65.8%	42.5	598 13.4%	35.7	322 7.2%	30.4
Set 3										
Item 62 '96 Form 23A	6 0.1%	27.5	558 6.8%	33.0	6921 85.0%	41.7	156 1.9%	31.7	506 6.2%	33.0
Item 62 '96 Form 23B	8 0.2%	29.4	351 7.8%	33.9	3705 82.7%	41.3	101 2.3%	28.9	313 7.0%	32.5
Set 4										
Item 63 '96 Form 23A	8 0.1%	30.9	617 7.6%	36.4	332 4.1%	34.3	6436 79.0%	41.8	754 9.3%	33.9
Item 61 '96 Form 23B B	8 0.2%	32.0	389 8.7%	35.6	211 4.7%	35.0	3443 76.9%	41.5	427 9.5%	32.8

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Table 31

Response patterns to last 5 items of 1994 physical sciences test, Form 15A, overall number of examinees: 8494

Item	Omit		A		B		C		D	
	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean
59	60 0.7%	28.7	2746 32.3%	44.5	1332 15.7%	37.1	759 8.9%	29.1	3597 42.3%	36.6
60	70 0.8%	29.3	468 5.5%	31.9	1052 12.4%	34.5	1393 16.4%	32.7	5511 64.9%	41.4
61	62 0.7%	29.2	6177 72.7%	40.1	941 11.1%	33.3	1002 11.8%	36.0	312 3.7%	33.3
62	71 0.8%	28.8	2094 24.7%	35.9	794 9.3%	36.0	4080 48.0%	41.3	1455 17.1%	36.3
63	100 1.2%	31.2	3201 37.7%	36.8	2029 23.9%	44.1	2338 27.5%	35.7	826 9.7%	40.5

Table 32

Response patterns to last 5 items of 1994 physical sciences test, Form 15B, overall number of examinees: 8026

Item	Omit		A		B		C		D	
	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean
59	55 0.7%	28.9	5942 74.0%	40.5	899 11.2%	32.9	867 10.8%	35.9	263 3.3%	33.2
60	71 0.9%	29.8	2595 32.3%	45.0	1220 15.2%	37.2	708 8.8%	28.9	3434 42.8%	37.0
61	162 2.0%	33.5	2969 37.0%	36.9	2060 25.7%	45.0	2136 26.6%	35.5	699 8.7%	40.8
62	92 1.1%	30.9	1809 22.5%	35.6	745 9.3%	35.6	4116 51.3%	41.9	1264 15.7%	36.1
63	92 1.1%	30.6	646 8.0%	35.4	960 12.0%	33.3	902 11.2%	35.4	5426 67.6%	41.0

Table 33

Response patterns to last 5 items of 1996 physical sciences test, Form 15A, overall number of examinees: 3638

Item	Omit		A		B		C		D	
	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean
59	31 0.9%	31.5	1260 34.6%	42.3	548 15.1%	37.8	288 7.9%	29.4	1511 41.5%	36.7
60	40 1.1%	33.1	184 5.1%	31.1	490 13.5%	35.0	554 15.2%	33.5	2370 65.1%	42.1
61	30 0.8%	31.5	2626 72.2%	41.2	411 11.3%	32.8	441 12.1%	36.0	130 3.6%	32.8
62	36 1.0%	32.4	813 22.3%	35.1	345 9.5%	36.1	1843 50.7%	42.5	601 16.5%	36.7
63	54 1.5%	33.3	1309 36.0%	37.2	919 25.3%	45.6	1045 28.7%	36.0	311 8.5%	40.6

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Table 34

Comparable items in Forms 15A and 15B of the 1994 and 1996 physical sciences test

Item	Omit		A		B		C		D	
Set 1	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean
Item 59 '94	60	28.7	*2746*	*44.5*	1332	37.1	759	29.1	3597	36.6
Form 15A	0.7%		*32.3%*		15.7%		8.9%		42.3%	
Item 60 '94	71	29.8	*2593*	*45.0*	1220	37.2	708	28.9	3434	37.0
Form 15B	0.9%		*32.3%*		15.2%		8.8%		42.8%	
Item 59 '96	31	31.5	*1260*	*42.3*	548	37.8	288	29.4	1511	36.7
Form 15A	0.9%		*34.6%*		15.1%		7.9%		41.5%	
Set 2										
Item 61 '94	62	29.2	*6177*	*40.1*	941	33.3	1002	36.0	312	33.3
Form 15A	0.7%		*72.7%*		11.1%		11.8%		3.7%	
Item 59 '94	55	28.9	*5942*	*40.5*	899	32.9	867	35.9	263	33.2
Form 15B	0.7%		*74.0%*		11.2%		10.8%		3.3%	
Item 51 '96	30	31.5	*3626*	*41.2*	411	32.8	441	36.0	130	32.8
Form 15A	0.8%		*72.2%*		11.3%		12.1%		3.6%	
Set 3										
Item 62 '94	71	28.8	2094	35.9	794	36.0	*4080*	*41.3*	1455	36.3
Form 15A	0.8%		24.7%		9.3%		*48.0%*		17.1%	
Item 62 '94	92	30.9	1809	35.6	745	35.6	*4116*	*41.9*	1264	36.1
Form 15B	1.1%		22.5%		9.3%		*51.3%*		15.7%	
Item 62 '96	36	32.4	813	35.1	345	36.1	*1843*	*42.5*	601	36.7
Form 15A	1.0%		22.3%		9.5%		*50.7%*		16.5%	
Set 4										
Item 63 '94	100	31.2	3201	36.8	*2039*	*44.1*	2338	35.7	826	40.5
Form 15A	1.2%		37.7%		*23.9%*		27.5%		9.7%	
Item 61 '94	162	33.5	2969	36.9	*2060*	*45.0*	2136	35.5	699	40.8
Form 15B	2.0%		37.0%		*25.7%*		26.6%		8.7%	
Item 63 '96	54	33.3	1309	37.2	*919*	*45.6*	1045	36.0	311	40.6
Form 15A	1.5%		36.0%		*25.3%*		28.7%		8.5%	

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Table 35

Response patterns to last 5 items of 1996 physical sciences test, Form 23A, overall number of examinees: 8147

Item	Omit		A		B		C		D	
	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean
59	44 0.5%	29.7	552 6.8%	34.3	***5121*** ***62.9%***	***40.5***	2203 27.0%	39.1	227 2.8%	31.7
60	32 0.4%	29.0	3121 28.6%	38.2	578 7.1%	37.7	***3742*** ***45.9%***	***41.5***	674 8.3%	34.8
61	46 0.6%	28.5	***4166*** ***51.1%***	***42.0***	907 11.1%	34.5	2012 24.7%	36.9	1016 12.5%	38.5
62	39 0.5%	28.7	***4652*** ***57.1%***	***42.6***	3073 37.7%	35.5	247 3.0%	32.1	136 1.7%	32.5
63	37 0.5%	28.3	***5225*** ***64.1%***	***42.2***	1184 14.5%	35.7	1107 13.6%	33.4	594 7.3%	33.4

Table 36

Response patterns to last 5 items of 1996 physical sciences test, Form 23B, overall number of examinees: 4478

Item	Omit		A		B		C		D	
	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean
59	33 0.7%	27.2	***2253*** ***50.3%***	***41.4***	486 10.9%	33.2	1171 26.2%	36.5	535 11.9%	37.8
60	30 0.7%	24.8	333 7.4%	32.8	***2878*** ***64.3%***	***40.2***	1109 24.8%	38.1	128 2.9%	30.4
61	25 0.6%	25.7	***2731*** ***61.0%***	***41.8***	747 16.7%	35.3	623 13.9%	33.0	352 7.9%	33.3
62	24 0.5%	25.0	***2514*** ***56.1%***	***42.0***	1665 37.2%	35.2	197 4.4%	31.0	78 1.7%	32.4
63	29 0.6%	25.6	***4004*** ***89.4%***	***39.7***	215 4.8%	31.9	174 3.9%	28.7	56 1.3%	31.5

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Table 37

Comparable items in Forms 23A and 23B of the 1996 physical sciences test

Item	Omit		A		B		C		D	
Set 1	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean
Item 61 '96	46	28.5	*4166*	*42.0*	907	34.5	2012	36.9	1016	38.5
Form 23A	0.6%		*51.1%*		11.1%		24.7%		12.5%	
Item 59 '96	33	27.2	*2253*	*41.4*	486	33.2	1171	36.5	535	37.8
Form 23B	0.7%		*50.3%*		10.9%		26.2%		11.9%	
Set 2										
Item 59 '96	44	29.7	552	34.3	*5121*	*40.2*	2203	39.1	227	31.7
Form 23A	0.5%		6.8%		*62.9%*		27.0%		2.8%	
Item 60 '96	30	24.8	333	32.8	*2878*	*40.2*	1109	38.1	128	30.4
Form 23B	0.7%		7.4%		*64.3%*		24.8%		2.9%	
Set 3										
Item 62 '96	39	28.7	*4652*	*42.6*	3073	35.5	247	32.1	136	32.5
Form 23A	0.5%		*57.1%*		37.7%		3.0%		1.7%	
Item 62 '96	24	25.0	*2514*	*42.0*	1665	35.2	197	31.0	78	32.4
Form 23B	0.5%		*56.1%*		37.2%		4.4%		1.7%	
Set 4										
Item 63 '96	37	28.3	*5225*	*42.3*	1184	35.7	1107	33.4	594	33.4
Form 23A	0.5%		*64.1%*		14.5%		13.6%		7.3%	
Item 61 '96	25	25.7	*2731*	*41.8*	747	35.3	623	33.0	352	33.3
Form 23B	0.6%		*61.0%*		16.7%		13.9%		7.9%	

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Table 38

Response patterns to last 5 items of 1994 verbal reasoning test, Form 15A, overall number of examinees: 8494

Item	Omit		A		B		C		D	
	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean
51	250 2.9%	28.7	4032 47.5%	40.4	1735 20.4%	32.3	1378 16.2%	33.1	1099 12.9%	35.9
52	312 3.7%	29.9	303 3.6%	31.3	1059 12.5%	32.6	1289 15.2%	31.9	5531 65.1%	39.2
53	332 3.9%	29.9	2446 28.8%	35.8	1245 14.7%	33.1	3979 46.8%	39.1	492 5.8%	33.7
54	382 4.5%	30.6	609 7.2%	33.7	1252 14.7%	32.8	4469 52.6%	39.2	1782 21.0%	35.2
55	388 4.6%	30.9	543 6.4%	33.5	5597 65.9%	38.6	946 11.1%	31.5	1020 12.0%	34.3

Table 39

Response patterns to last 5 items of 1994 verbal reasoning test, Form 15B, overall number of examinees: 8026

Item	Omit		A		B		C		D	
	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean
51	244 3.0%	29.0	4424 55.1%	40.4	1970 24.5%	34.6	843 10.5%	32.0	545 6.8%	31.9
52	263 3.3%	29.1	4589 57.2%	40.4	1180 14.7%	31.9	1740 21.7%	34.4	254 3.2%	30.0
53	343 4.3%	30.4	470 5.9%	34.3	1540 19.2%	34.7	3761 46.9%	36.7	1913 23.8%	41.9
54	360 4.5%	30.4	811 10.1%	35.8	2774 34.6%	35.5	3565 44.4%	39.8	516 6.4%	34.7
55	382 4.8%	30.7	2736 34.1%	42.0	1102 13.7%	33.3	1494 18.6%	35.3	2312 28.8%	35.6

Table 40

Response patterns to last 5 items of 1996 verbal reasoning test, Form 15A, overall number of examinees: 3638

Item	Omit		A		B		C		D	
	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean
51	84 2.3%	31.4	1901 52.3%	41.5	656 18.0%	33.1	547 15.0%	33.5	450 12.4%	36.8
52	101 2.8%	31.9	92 2.5%	31.3	380 10.4%	33.8	539 14.8%	32.3	2526 69.4%	40.5
53	120 3.3%	32.5	940 25.8%	36.7	438 12.0%	34.2	1985 54.6%	40.1	155 4.3%	32.8
54	134 3.7%	33.0	248 6.8%	35.2	377 10.4%	32.1	2105 57.9%	40.4	774 21.3%	35.8
55	138 3.8%	33.1	197 5.4%	33.4	2515 69.1%	39.8	340 9.3%	32.2	448 12.3%	35.3

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Table 41

Comparable items from the end of Form 15A and earlier in Form 15B from the 1994 and 1996 verbal reasoning test

Item	Omit		A		B		C		D	
Set 1	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean
Item 51 '94	250	28.7	4032	40.4	1735	32.3	1378	33.1	1099	35.9
Form 15A	2.9%		47.5%		20.4%		16.2%		12.9%	
Item 51 '96	84	31.4	1901	41.5	656	33.1	547	33.5	450	36.8
Form 15A	2.3%		52.3%		18.0%		15.0%		12.4%	
Item 45 '94	119	25.6	4265	41.1	1457	31.4	1091	32.1	1094	35.7
Form 15B	1.5%		53.1%		18.2%		13.6%		13.6%	
Set 2										
Item 52 '94	312	29.9	303	31.3	1059	32.6	1289	31.9	5331	39.2
Form 15A	3.7%		3.6%		12.5%		15.2%		63.1%	
Item 52 '96	101	31.9	92	31.3	380	33.8	539	32.3	2526	40.9
Form 15A	2.8%		2.5%		10.4%		14.8%		69.4%	
Item 46 '94	134	25.8	231	28.8	829	31.9	1027	30.8	5805	39.6
Form 15B	1.7%		2.9%		10.3%		12.8%		72.3%	
Set 3										
Item 53 '94	332	29.9	2446	35.8	1245	33.1	3979	39.1	492	33.7
Form 15A	3.9%		28.8%		14.7%		46.8%		5.8%	
Item 53 '96	120	32.5	940	36.7	438	34.2	1985	40.1	155	32.8
Form 15A	3.3%		25.8%		12.0%		54.6%		4.3%	
Item 47 '94	149	26.5	2398	35.7	942	32.2	4127	39.9	410	32.7
Form 15B	1.9%		29.9%		11.7%		51.4%		5.1%	
Set 4										
Item 54 '94	382	30.6	609	33.7	1252	32.8	4469	39.2	1782	35.2
Form 15A	4.5%		7.2%		14.7%		52.6%		21.0%	
Item 54 '96	134	33.0	248	35.2	377	32.1	2105	40.4	774	35.8
Form 15A	3.7%		6.8%		10.4%		57.9%		21.3%	
Item 48 '94	169	27.2	573	33.1	957	30.9	4524	40.0	1803	35.5
Form 15B	2.1%		7.1%		11.9%		56.4%		22.5%	
Set 5										
Item 55 '94	388	30.9	543	33.5	5597	38.6	946	31.5	1020	34.3
Form 15A	4.6%		6.4%		65.9%		11.1%		12.0%	
Item 55 '96	138	33.1	197	33.4	2515	39.8	340	32.2	448	35.3
Form 15A	3.8%		5.4%		69.1%		9.3%		12.3%	
Item 49 '94	186	27.2	452	31.4	58.4	39.2	611	28.5	973	34.7
Form 15B	2.3%		5.6%		72.3%		7.6%		12.1%	

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Table 42

Comparable items from earlier in Form 15A and the end of Form 15B from the 1994 and 1996 verbal reasoning test

Item	Omit		A		B		C		D	
Set 1	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean
Item 43 '94	122	27.6	4909	39.2	2075	34.3	778	31.8	610	32.1
Form 15A	1.4%		57.8%		24.4%		9.2%		7.2%	
Item 43 '96	39	32.0	2260	40.2	819	35.5	287	32.7	233	32.5
Form 15A	1.1%		62.1%		22.5%		7.9%		6.4%	
Item 51 '94	244	29.0	4424	40.4	1970	34.6	843	32.0	545	31.9
Form 15B	3.0%		55.1%		24.5%		10.5%		6.8%	
Set 2										
Item 44 '94	112	26.5	5200	39.2	1059	31.5	1830	34.0	293	30.6
Form 15A	1.3%		61.2%		12.5%		21.0%		3.4%	
Item 44 '96	32	30.3	2356	40.4	376	32.6	776	34.3	98	31.0
Form 15A	0.9%		64.8%		10.3%		21.3%		2.7%	
Item 52 '94	263	29.1	4589	40.4	1180	31.9	1740	34.4	254	30.0
Form 15B	3.3%		57.2%		14.7%		21.7%		3.2%	
Set 3										
Item 45 '94	164	28.5	481	34.3	1588	34.3	4194	36.3	2067	40.4
Form 15A	1.9%		5.7%		18.7%		49.4%		24.3%	
Item 45 '96	48	31.7	213	37.5	657	35.7	1727	36.8	993	41.8
Form 15A	1.3%		5.9%		18.1%		47.5%		27.3%	
Item 53 '94	343	30.4	470	34.3	1540	34.7	3761	36.7	1912	41.9
Form 15B	4.3%		5.9%		19.2%		46.9%		23.8%	
Set 4										
Item 46 '94	185	28.4	908	35.0	3153	35.0	3732	39.0	516	34.5
Form 15A	2.2%		10.7%		37.1%		43.9%		6.1%	
Item 46 '96	56	31.1	384	35.1	1271	36.3	1710	40.4	217	35.3
Form 15A	1.5%		10.6%		34.9%		47.0%		6.0%	
Item 54 '94	360	30.4	811	35.8	2774	35.5	3565	39.8	516	34.7
Form 15B	4.5%		10.1%		34.6%		44.4%		6.4%	
Set 5										
Item 47 '94	200	29.1	2803	40.8	1157	33.5	1442	34.5	2892	35.4
Form 15A	2.4%		33.0%		13.6%		17.0%		34.0%	
Item 47 '96	58	31.4	1353	42.2	402	34.8	580	35.7	1245	35.7
Form 15A	1.6%		37.2%		11.1%		15.9%		34.2%	
Item 55 '94	382	30.7	2736	42.0	1102	33.3	1494	35.3	2312	35.6
Form 15B	4.8%		34.1%		13.7%		18.6%		28.8%	

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Table 43

Response patterns to last 5 items of 1996 verbal reasoning test, Form 23A, overall number of examinees: 8147

Item	Omit		A		B		C		D	
	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean
51	188 2.3%	28.1	1625 19.9%	35.0	4874 59.8%	37.9	1174 14.4%	32.2	286 3.5%	30.5
52	257 3.2%	29.5	969 11.9%	32.1	1195 14.7%	31.4	5369 65.9%	38.4	357 4.4%	30.8
53	276 3.4%	30.0	486 6.0%	32.3	1772 21.8%	33.3	1183 14.5%	32.1	4430 54.4%	38.9
54	271 3.3%	29.6	4897 60.1%	38.8	1019 12.5%	31.4	1699 20.9%	32.8	261 3.2%	30.2
55	294 3.6%	29.9	985 12.1%	33.8	741 9.1%	31.4	754 9.3%	31.4	5373 66.0%	38.0

Table 44

Response patterns to last 5 items of 1996 verbal reasoning test, Form 23B, overall number of examinees: 4478

Item	Omit		A		B		C		D	
	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean
51	124 2.8%	26.2	399 8.9%	32.5	2161 48.3%	35.4	1412 31.5%	38.2	382 8.5%	33.9
52	138 3.1%	26.9	1207 27.0%	39.1	1609 35.9%	35.3	473 10.6%	31.0	1051 23.5%	35.6
53	152 3.4%	26.7	367 8.2%	30.7	3244 72.4%	37.6	409 9.1%	33.5	306 6.8%	31.6
54	171 3.8%	27.7	780 17.4%	35.7	1715 38.3%	38.8	1211 27.0%	33.5	601 13.4%	33.5
55	182 4.1%	28.5	196 4.4%	31.5	654 14.6%	33.6	894 20.0%	33.6	2552 57.0%	37.8

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Table 45

Comparable items from the end of Form 23A and earlier in Form 23B from the 1996 verbal reasoning test

Item	Omit		A		B		C		D	
Set 1	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean
Item 51 '96	188	28.1	1625	35.0	4874	37.9	1174	32.2	286	30.5
Form 23A	2.3%		19.9%		59.8%		14.4%		3.5%	
Item 37 '96	38	24.3	929	34.6	2869	37.4	512	30.3	130	29.9
Form 23B	0.8%		20.7%		64.1%		11.4%		2.9%	
Set 2										
Item 52 '96	257	29.5	969	32.1	1195	31.4	5369	38.4	357	30.8
Form 23A	3.2%		11.9%		14.7%		65.9%		4.4%	
Item 38 '96	51	25.7	535	30.0	463	30.2	3250	37.9	179	29.3
Form 23B	1.1%		11.9%		10.3%		72.6%		4.0%	
Set 3										
Item 53 '96	276	30.0	486	32.3	1772	33.3	1183	32.1	4430	38.9
Form 23A	3.4%		6.0%		21.8%		14.5%		54.4%	
Item 39 '96	49	23.7	268	32.1	914	31.9	452	30.9	2795	38.3
Form 23B	1.1%		6.0%		20.4%		10.1%		62.4%	
Set 4										
Item 54 '96	271	29.6	4897	38.8	1019	31.4	1699	32.8	261	30.2
Form 23A	3.3%		60.1%		12.5%		20.9%		3.2%	
Item 40 '96	43	23.3	3108	38.4	416	29.3	817	31.4	94	27.2
Form 23B	1.0%		69.4%		9.3%		18.2%		2.1%	
Set 5										
Item 55 '96	294	29.9	985	33.8	741	31.4	754	31.4	5373	38.0
Form 23A	3.6%		12.1%		9.1%		9.3%		66.0%	
Item 41 '96	79	27.2	576	33.5	279	28.3	244	28.9	5309	37.4
Form 23B	1.8%		12.9%		6.2%		5.4%		73.7%	

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Table 46

Comparable items from earlier in Form 23A and the end of Form 23B from the 1996 verbal reasoning test

Item	Omit		A		B		C		D	
Set 1	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean
Item 39 '96	64	32.3	574	32.3	4217	35.3	2547	38.9	745	34.0
Form 23A	0.8%		7.0%		51.8%		31.3%		9.1%	
Item 51 '96	124	26.2	399	32.5	2161	35.4	1412	38.2	382	33.9
Form 23B	2.8%		8.9%		48.3%		31.5%		8.5%	
Set 2										
Item 40 '96	66	26.2	2335	38.8	3163	35.5	432	30.7	2151	35.1
Form 23A	0.8%		28.7%		38.8%		5.3%		26.4%	
Item 52 '96	138	26.9	1207	39.1	1609	35.3	473	31.0	1051	35.6
Form 23B	3.1%		27.0%		35.9%		10.6%		23.5%	
Set 3										
Item 41 '96	55	27.8	516	29.5	6746	37.3	378	29.8	452	31.4
Form 23A	0.7%		6.3%		82.8%		4.6%		5.5%	
Item 53 '96	152	26.7	367	30.7	3244	37.6	409	33.5	306	31.6
Form 23B	3.4%		8.2%		72.4%		9.1%		6.8%	
Set 4										
Item 42 '96	87	26.7	1636	35.4	3312	39.3	1878	32.6	1234	33.8
Form 23A	1.1%		20.1%		40.7%		23.1%		15.1%	
Item 54 '96	171	27.7	780	35.7	1715	38.8	1211	33.5	601	33.5
Form 23B	3.8%		17.4%		38.3%		27.0%		13.4%	
Set 5										
Item 43 '96	88	26.8	239	31.0	1025	33.4	1209	34.4	5587	37.3
Form 23A	1.1%		2.9%		12.6%		14.8%		68.6%	
Item 55 '96	182	28.5	196	31.5	654	33.6	894	33.6	2552	37.8
Form 23B	4.1%		4.4%		14.6%		20.0%		57.0%	

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Table 47

Selected group performance on item 51 of the 1996 Form 23A verbal reasoning section of the MCAT contrasted with item 37 of the 1996 Form 23B verbal reasoning section

	Omit		A		B		C		D	
	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean
All Item 51	188 2.3%	28.1	1625 19.9%	35.0	4874 59.8%	37.9	1174 14.4%	32.2	286 3.5%	30.5
All Item 37	38 0.8%	24.3	929 20.7%	34.6	2869 64.1%	37.4	512 11.4%	30.3	130 11.4%	29.9
Race-Missing Item 51	13 2.9%	27.4	93 20.6%	37.3	280 62.1%	39.7	51 11.3%	33.7	14 3.1%	35.4
Race-Missing Item 37	3 1.3%	23.0	49 21.1%	36.9	149 64.2%	38.7	23 9.9%	32.6	8 3.4%	30.4
Race= Asian Item 51	41 2.1%	29.9	427 22.2%	34.6	1106 57.5%	37.4	276 14.4%	32.8	72 3.7%	29.6
Race= Asian Item 37	8 0.9%	31.9	225 24.2%	35.2	563 60.5%	37.4	114 12.2%	32.1	21 2.3%	32.3
Race= Black Item 51	43 6.2%	26.7	128 18.5%	30.3	337 48.8%	32.0	144 20.8%	29.1	39 5.6%	26.8
Race= Black Item 37	9 2.3%	21.2	76 19.2%	30.2	225 57.0%	32.4	69 17.5%	26.0	16 4.1%	28.8
Race=Hispanic Item 51	8 3.6%	28.6	58 25.8%	32.1	115 51.1%	33.3	36 16.0%	27.6	8 3.6%	28.0
Race=Hispanic Item 37	3 1.9%	20.7	36 23.1%	30.6	85 54.5%	33.0	27 17.3%	26.7	5 3.2%	24.6
Race= Other Item 51	19 3.8%	19.8	96 19.3%	29.5	238 47.9%	32.8	108 21.7%	25.8	36 7.2%	26.5
Race= Other Item 37	6 1.5%	15.5	93 22.6%	28.4	206 50.0%	30.4	80 19.4%	24.3	27 6.6%	23.5
Race= White Item 51	64 1.5%	31.1	823 18.9%	36.5	2798 64.2%	39.3	559 12.8%	34.0	117 2.7%	33.0
Race= White Item 37	9 0.4%	28.3	450 19.1%	36.5	1641 69.8%	39.0	199 8.5%	33.4	53 2.3%	33.0
Female Item 51	106 2.8%	26.9	739 19.3%	34.4	2348 61.2%	37.8	514 13.4%	31.5	127 3.3	30.1
Female Item 37	21 1.0%	24.6	437 20.6%	34.5	1351 63.6%	37.3	257 12.1%	29.4	58 2.7%	28.9
Male Item 51	82 1.9%	29.5	886 20.6%	35.4	2524 58.6%	38.1	659 15.3%	32.7	159 3.7	30.8
Male Item 37	17 0.7%	24.1	492 20.9%	34.8	1518 64.5%	37.4	255 10.8%	31.2	72 3.1%	30.7

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Table 48

Selected group performance on item 52 of the 1996 Form 23A verbal reasoning section of the MCAT contrasted with item 38 of the 1996 Form 23B verbal reasoning section

	Omit		A		B		C		D	
	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean
All Item 52	257 3.2%	29.5	969 11.9%	32.1	1195 14.7%	31.4	3369 41.5%	38.4	357 4.4%	30.8
All Item 38	51 1.1%	25.7	535 11.9%	30.0	463 10.3%	30.2	3230 72.0%	37.9	179 4.0%	29.3
Race-Missing Item 52	17 3.8%	27.7	46 10.2%	31.4	56 12.4%	33.7	322 71.4%	40.4	10 2.2%	32.7
Race-Missing Item 38	1 0.4%	NA	23 9.9%	31.5	22 9.5%	31.0	178 76.7%	39.2	8 3.4%	30.1
Race= Asian Item 52	58 3.0%	31.6	252 13.1%	31.7	299 15.6%	31.2	1227 63.8%	38.1	86 4.5%	30.4
Race= Asian Item 38	10 1.1%	31.2	122 13.1%	30.3	91 9.8%	31.1	664 71.3%	38.1	44 4.7%	32.0
Race= Black Item 52	54 7.8%	26.8	97 14.0%	27.2	155 22.4%	27.4	337 48.8%	33.4	48 6.9%	29.0
Race= Black Item 38	15 3.8%	25.0	74 18.7%	28.4	64 16.2%	27.2	219 56.4%	33.0	23 5.8%	26.0
Race=Hispanic Item 52	11 4.9%	28.3	28 12.4%	30.3	48 21.3%	27.8	124 55.1%	34.7	14 6.2%	25.1
Race=Hispanic Item 38	3 1.9%	20.7	27 17.3%	27.9	22 14.1%	27.7	91 58.3%	33.8	13 8.3%	24.1
Race= Other Item 52	22 4.4%	21.0	83 16.7%	27.6	108 21.7%	27.9	247 49.7%	32.2	37 7.2%	27.6
Race= Other Item 38	7 1.7%	20.9	84 20.4%	24.2	70 17.0%	25.2	216 52.4%	31.6	35 8.5%	23.4
Race= White Item 52	95 2.2%	32.2	463 10.6%	34.2	529 12.1%	33.5	3112 71.4%	39.3	162 3.7%	32.6
Race= White Item 38	15 0.6%	26.9	205 8.7%	32.8	194 8.2%	32.8	1883 80.0%	39.2	56 2.4%	33.2
Female Item 52	150 3.9%	28.8	478 12.5%	31.6	554 14.4%	30.9	2483 64.8%	38.3	169 4.4%	30.8
Female Item 38	32 1.5%	26.9	294 13.8%	29.9	216 10.2%	30.6	1489 70.1%	37.8	93 4.4%	29.1
Male Item 52	107 2.5%	30.5	490 11.4%	32.5	641 14.9%	31.8	2884 66.9%	38.5	188 4.4%	30.7
Male Item 38	19 0.8%	23.6	241 10.2%	30.1	247 10.5%	29.8	1761 74.8%	38.0	86 3.7%	29.4

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Table 49

Selected group performance on item 53 of the 1996 Form 23A verbal reasoning section of the MCAT contrasted with item 39 of the 1996 Form 23B verbal reasoning section

	Omit		A		B		C		D	
	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean
All Item 53	276 3.4%	30.0	486 6.0%	32.3	1772 21.8%	33.3	1183 14.5%	32.1	4430 54.4%	38.9
All Item 39	49 1.1%	23.7	268 6.0%	32.1	914 20.4%	31.9	452 10.1%	30.9	2795 62.4%	38.2
Race-Missing Item 53	21 4.7%	29.3	22 4.9%	34.7	90 20.0%	34.4	50 11.1%	35.0	268 59.4%	40.8
Race-Missing Item 39	3 1.3%	23.0	14 6.0%	33.9	42 18.1%	32.3	11 4.7%	32.4	162 69.8%	39.4
Race= Asian Item 53	61 3.2%	30.7	117 6.1%	31.2	387 20.1%	36.3	277 14.4%	32.7	1080 56.2%	38.3
Race= Asian Item 39	8 0.9%	28.6	52 5.6%	32.0	184 19.8%	32.2	76 8.2%	31.5	611 65.6%	38.2
Race= Black Item 53	53 7.7%	26.5	65 9.4%	29.3	165 23.9%	29.1	138 20.0%	28.2	279 39.1%	33.3
Race= Black Item 39	10 2.5%	19.7	25 6.3%	27.6	94 23.8%	28.1	68 17.2%	28.0	198 50.1%	33.3
Race=Hispanic Item 53	11 4.9%	27.4	14 6.2%	30.7	64 28.4%	29.5	48 21.3%	28.6	88 39.1%	35.8
Race=Hispanic Item 39	3 1.9%	20.7	10 6.4%	29.4	39 25.0%	28.5	27 17.3%	28.9	77 49.4%	33.3
Race= Other Item 53	21 4.2%	21.1	45 9.1%	27.1	139 28.0%	28.0	119 23.9%	27.2	173 34.8%	34.4
Race= Other Item 39	9 2.2%	15.4	39 9.5%	27.0	120 29.1%	25.4	72 17.5%	24.4	172 41.7%	32.5
Race= White Item 53	109 2.5%	33.4	223 5.1%	34.7	927 21.3%	35.3	551 12.6%	34.0	2551 58.5%	40.0
Race= White Item 39	16 0.7%	29.1	128 5.4%	34.7	435 18.5%	34.7	198 8.4%	34.1	1575 67.0%	39.6
Female Item 53	155 4.0%	29.0	240 6.3%	33.3	845 22.0%	32.7	558 14.6%	31.8	2036 53.1%	38.9
Female Item 39	29 1.4%	24.0	124 5.8%	32.3	445 21.0%	31.9	221 10.4%	30.0	1305 61.4%	38.1
Male Item 53	121 2.8%	31.3	246 5.7%	32.3	926 21.5%	33.8	624 14.5%	32.5	2393 55.5%	38.9
Male Item 39	20 0.8%	23.4	144 6.1%	32.0	469 19.9%	32.0	231 9.8%	31.7	1490 63.3%	38.3

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Table 50

Selected group performance on item 54 of the 1996 Form 23A verbal reasoning section of the MCAT contrasted with item 40 of the 1996 Form 23B verbal reasoning section

	Omit		A		B		C		D	
	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean
All Item 54	271 3.3%	29.6	4897 60.1%	38.8	1019 12.5%	31.4	1699 20.9%	32.8	261 3.2%	30.2
All Item 40	43 1.0%	23.3	3108 69.4%	38.4	416 9.3%	29.3	817 18.2%	31.4	94 2.1%	27.2
Race-Missing Item 54	17 3.8%	29.9	301 66.7%	40.3	48 10.6%	32.8	73 16.2%	34.4	12 2.7%	34.3
Race-Missing Item 40	2 0.9%	16.5	171 73.7%	39.8	21 9.1%	28.3	32 13.8%	32.3	6 2.6%	27.2
Race= Asian Item 54	58 3.0%	29.6	1170 60.9%	38.2	222 11.6%	31.2	399 20.8%	32.8	73 3.8%	30.0
Race= Asian Item 40	6 0.6%	29.8	690 74.1%	37.9	70 7.5%	29.0	153 16.4%	31.2	12 1.3%	32.9
Race= Black Item 54	54 7.8%	26.4	297 43.0%	33.6	137 19.8%	27.8	172 24.9%	28.5	31 4.5%	28.0
Race= Black Item 40	9 2.3%	20.8	207 52.4%	32.9	56 14.2%	26.5	106 26.8%	29.5	17 4.3%	24.5
Race=Hispanic Item 54	12 5.3%	29.3	106 47.1%	35.0	40 17.8%	28.8	58 25.8%	29.5	9 4.0%	24.4
Race=Hispanic Item 40	3 1.9%	20.7	84 53.8%	34.0	19 12.2%	27.7	44 28.2%	28.0	6 3.8%	22.2
Race= Other Item 54	22 4.4%	20.9	206 41.4%	34.7	107 21.5%	25.3	132 26.6%	27.6	30 6.0%	25.9
Race= Other Item 40	9 2.2%	14.1	194 47.1%	31.8	84 20.4%	25.3	102 24.8%	25.8	23 5.6%	22.8
Race= White Item 54	108 2.5%	33.0	2817 64.6%	39.9	465 10.7%	33.9	865 19.8%	34.4	106 2.4%	32.2
Race= White Item 40	14 0.6%	29.6	1762 74.9%	39.5	166 7.1%	32.7	380 16.2%	33.8	30 1.3%	30.8
Female Item 54	143 3.7%	28.4	2354 61.4%	38.6	447 11.7%	30.5	773 20.2%	32.3	117 3.1%	29.6
Female Item 40	25 1.2%	22.7	1454 68.5%	37.9	209 9.8%	29.0	390 9.8%	31.4	46 2.2%	26.8
Male Item 54	128 3.0%	31.0	2542 59.0%	39.0	572 13.3%	32.0	925 21.5%	33.2	143 3.3%	30.7
Male Item 40	18 0.8%	24.2	1654 70.3%	38.2	207 8.8%	29.6	427 18.1%	31.4	48 2.0%	27.5

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Table 51

Selected group performance on item 55 of the 1996 Form 23A verbal reasoning section of the MCAT contrasted with item 41 of the 1996 Form 23B verbal reasoning section

	Omit		A		B		C		D	
	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean	N Percent	Mean
All Item 55	294 3.6%	29.9	985 12.1%	33.8	741 9.1%	31.4	754 9.3%	31.4	5373 66.0%	38.0
All Item 41	79 1.8%	27.2	576 12.9%	33.5	279 6.2%	28.3	244 5.4%	28.9	3300 73.7%	37.4
Race-Missing Item 55	21 4.7%	29.5	52 11.5%	35.0	38 8.4%	32.0	32 7.1%	32.2	308 68.3%	40.5
Race-Missing Item 41	4 1.7%	29.0	27 11.6%	34.9	13 5.6%	27.8	11 4.7%	30.6	177 76.3%	38.9
Race= Asian Item 55	63 3.3%	30.7	213 11.1%	33.2	179 9.2%	31.1	177 9.2%	32.3	1290 67.1%	37.4
Race= Asian Item 41	17 1.8%	30.9	101 10.8%	33.5	53 5.7%	29.3	45 4.8%	29.0	715 76.8%	37.4
Race= Black Item 55	56 8.1%	26.6	99 14.3%	29.1	88 12.7%	28.1	87 12.6%	28.3	361 52.2%	32.4
Race= Black Item 41	14 3.5%	23.6	64 16.2%	29.6	40 10.1%	26.2	40 10.1%	26.7	237 60.0%	32.5
Race=Hispanic Item 55	13 5.8%	29.8	22 9.8%	32.6	34 15.1%	26.9	32 14.2%	27.7	124 55.1%	34.2
Race=Hispanic Item 41	5 3.2%	26.2	24 15.4%	31.6	14 9.0%	26.2	15 9.6%	25.9	98 62.8%	32.3
Race= Other Item 55	23 4.6%	21.2	57 11.5%	28.1	68 13.7%	25.8	92 18.5%	26.7	257 51.7%	32.9
Race= Other Item 41	10 2.4%	15.8	63 15.3%	27.3	63 15.3%	23.2	46 11.2%	22,3	230 55.8%	31.4
Race= White Item 55	118 2.7%	32.9	542 12.4%	35.5	334 7.7%	34.0	334 7.7%	33.3	3033 69.5%	39.3
Race= White Item 41	29 1.2%	30.6	297 12.6%	35.6	96 4.1%	32.3	87 3.7%	33.5	1843 78.4%	38.9
Female Item 55	159 4.1%	29.1	468 12.2%	33.8	330 8.6%	31.0	357 9.3%	31.1	2520 65.7%	37.8
Female Item 41	46 2.2%	26.9	262 12.3%	33.7	142 6.7%	28.3	133 6.3%	28.0	1541 72.6%	37.3
Male Item 55	135 3.1%	30.9	517 12.0%	33.9	411 9.5%	31.8	396 9.2%	31.7	2851 66.1%	38.3
Male Item 41	33 1.4%	27.6	314 13.3%	33.3	137 5.8%	28.3	111 4.7%	29.9	1759 74.7%	37.5

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Table 52
Correlations and split half reliabilities for the biological sciences section of the MCAT

Test	*Odd/Even Split*		*First/Last Split*		Alpha for whole test
	Correlation	Reliability	Correlation	Reliability	
1996 Form 15A	0.773	0.872	0.725	0.841	0.872
1994 Form 15A	0.747	0.855	0.714	0.834	0.861
1994 Form 15B	0.775	0.873	0.738	0.849	0.875
1996 Form 23A	0.775	0.873	0.701	0.824	0.868
1996 Form 23B	0.781	0.877	0.734	0.847	0.874

Table 53
Correlations and split half reliabilities for the physical sciences section of the MCAT

Test	**Odd/Even Split**		**First/Last Split**		Alpha for whole test
	Correlation	Reliability	Correlation	Reliability	
1996 Form 15A	0.791	0.883	0.721	0.838	0.882
1994 Form 15A	0.777	0.875	0.710	0.831	0.873
1994 Form 15B	0.802	0.890	0.729	0.844	0.885
1996 Form 23A	0.766	0.868	0.710	0.831	0.869
1996 Form 23B	0.779	0.876	0.714	0.833	0.872

Table 54
Correlations and split half reliabilities for the verbal reasoning section of the MCAT

Test	*Odd/Even Split*		**First/Last Split**		Alpha for whole test
	Correlation	Reliability	Correlation	Reliability	
1996 Form 15A	0.770	0.870	0.580	0.734	0.860
1994 Form 15A	0.762	0.865	0.571	0.727	0.854
1994 Form 15B	0.787	0.881	0.642	0.782	0.875
1996 Form 23A	0.738	0.849	0.565	0.722	0.839
1996 Form 23B	0.734	0.847	0.599	0.749	0.850

Table 55

Correlations and split half reliabilities for selected ethnic groups on the 1994 Form 15A verbal reasoning section of the MCAT

Ethnic Group	Odd/Even Split		First/Last Split		Alpha for whole test
	Correlation	Reliability	Correlation	Reliability	
White N= 4557	0.716	0.835	0.676	0.511	0.819
Black N= 729	0.684	0.813	0.434	0.606	0.814
Asian N= 2021	0.747	0.855	0.544	0.705	0.843
Hispanic N= 276	0.758	0.863	0.482	0.650	0.842

Table 56

Correlations and split half reliabilities for selected ethnic groups on the 1994 Form 15B verbal reasoning section of the MCAT

Ethnic Group	Odd/Even Split		First/Last Split		Alpha for whole test
	Correlation	Reliability	Correlation	Reliability	
White N= 4344	0.732	0.845	0.591	0.742	0.844
Black N= 665	0.761	0.865	0.505	0.671	0.842
Asian N= 1831	0.783	0.878	0.622	0.776	0.866
Hispanic N= 244	0.759	0.863	0.731	0.576	0.856

Table 57

Correlations and split half reliabilities for selected ethnic groups on the 1996 Form 15A verbal reasoning section of the MCAT

Ethnic Group	Odd/Even Split		First/Last Split		Alpha for whole test
	Correlation	Reliability	Correlation	Reliability	
White N= 2058	0.737	0.849	0.546	0.707	0.835
Black N= 319	0.733	0.846	0.415	0.587	0.830
Asian N= 873	0.771	0.870	0.593	0.745	0.863
Hispanic N= 110	0.784	0.879	0.502	0.668	0.852

Table 58

Correlations and split half reliabilities for selected ethnic groups on the 1996 Form 23A verbal reasoning section of the MCAT

Ethnic Group	Odd/Even Split		First/Last Split		Alpha for whole test
	Correlation	Reliability	Correlation	Reliability	
White N= 4361	0.673	0.804	0.505	0.671	0.793
Black N= 691	0.688	0.815	0.471	0.640	0.797
Asian N= 1922	0.727	0.842	0.546	0.706	0.828
Hispanic N= 225	0.742	0.852	0.452	0.622	0.819

Table 59

Correlations and split half reliabilities for selected ethnic groups on the 1996 Form 23B verbal reasoning section of the MCAT

Ethnic Group	Odd/Even Split		First/Last Split		Alpha for whole test
	Correlation	Reliability	Correlation	Reliability	
White N= 2352	0.644	0.784	0.506	0.672	0.792
Black N= 395	0.670	0.803	0.519	0.683	0.812
Asian N= 931	0.714	0.833	0.581	0.735	0.830
Hispanic N= 156	0.693	0.819	0.497	0.664	0.816

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